nero 9

Manual
Nero Burning ROM

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1 Start Successfully

1.1 About the Manual

This manual is intended for all users who want to learn how to use Nero Burning ROM. It is process-based and explains how to achieve a specific objective on a step-by-step basis.

To make best use of this documentation, please note the following conventions:

(warning icon)	Indicates warnings, preconditions or instructions that have to be precisely followed.
(lightbulb icon)	Indicates additional information or advice.
1. Start …	The number at the beginning of a line indicates a prompt for action. Carry out these actions in the order specified.
→	Indicates an intermediate result.
➜	Indicates a result.
OK	Indicates text passages or buttons that appear in the program interface. They are shown in boldface.
(see…)	Indicates references to other chapters. They are executed as links and are shown in red and underlined.
[…]	Indicates keyboard shortcuts for entering commands.

1.2 About Nero Burning ROM

The powerful burning software Nero Burning ROM allows you to burn your data, music and videos to disc. Nero Burning ROM gives you full, customized control of your burning projects. You can − among other things − define the file system, the length of the file name and the character set; you can also change the disc label. And of course, you can also customize the Nero Burning ROM toolbar and change the keyboard shortcuts.
It is just as easy to create Nero Burning ROM discs with SecurDisc and a SecurDisc supported drive. SecurDisc is a new hardware and software technology developed by Nero and HLDS with which you can create discs with special protection properties, such as data integrity, reconstructability, encryption and duplication protection. Such discs can be created with SecurDisc supported drives (e.g. from HLDS/LG and Nero Burning ROM) and read from any drive with InCD or InCD Reader.

Despite its wide range of features, Nero Burning ROM has remained an easy-to-use burning program that creates discs in just a few steps. You select the disc type to be burned (CD/DVD/Blu-ray), define the project type, add the required data and then start burning.

Using Nero Burning ROM you can save audio files from an Audio CD on the hard drive. In the process, the files are encoded, i.e. converted into a format that the computer can read.

The Audio CD can be automatically identified with Gracenote. So called metadata such as title, genre, and track title are accessed by the Gracenote Media Database and associated to the tracks. That way you have audio files that are accurately and fully named after the encoding process.

> Music recognition technology and related data are provided by Gracenote®. Gracenote is the industry standard in music recognition technology and related content delivery. For more information, please visit www.gracenote.com.

1.3   Working With The Program

The main function of Nero Burning ROM is to select files and folders and to burn them to a disc. This is done in three basic steps:

- In the **New Compilation** window, select a disc type and the disc format and set the options on the tabs.
- In the selection screen, select files that you want to burn.
- Start the burn process.

See also:

2   Starting The Program

To start Nero Burning ROM via Nero StartSmart, proceed as follows:

1. Click the **StartSmart** icon.
→ The Nero StartSmart window opens.

2. Click the ⬤ button.
→ The list of Nero applications appears.
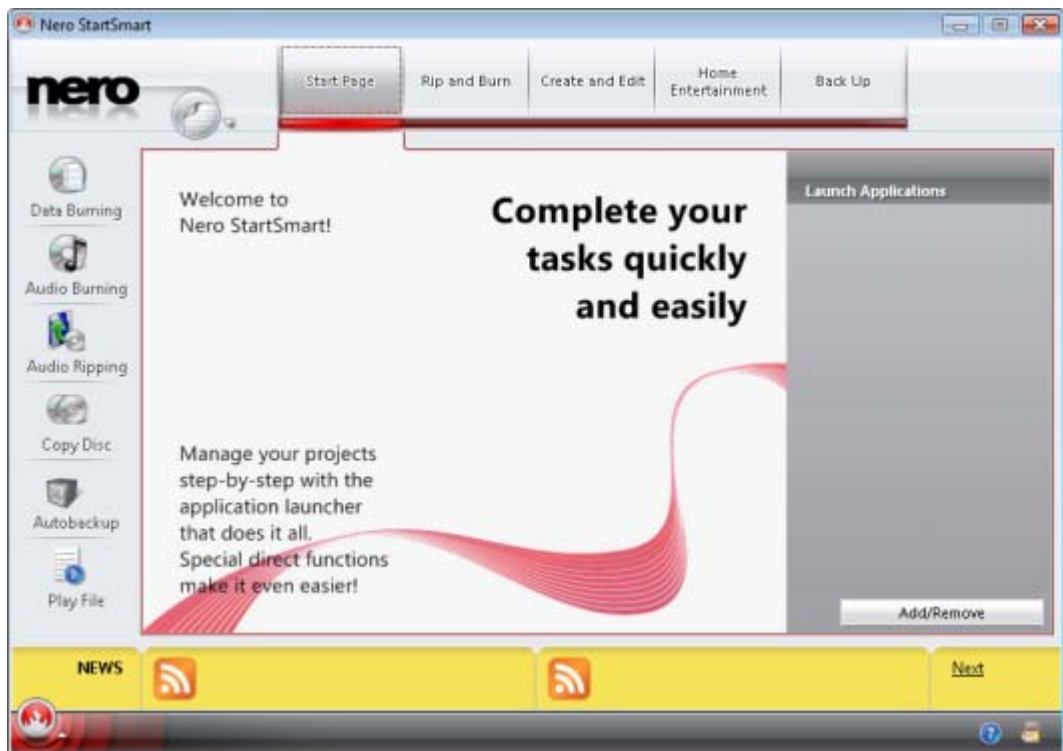
Nero StartSmart window

3. Select the Nero Burning ROM entry in the selection list.
→ The Nero Burning ROM window opens.
→ You have launched Nero Burning ROM via Nero StartSmart.

3 Main Screen

The main screen of Nero Burning ROM is the starting point for all actions. It consists of a menu bar and a toolbar with buttons and a drop-down menu.
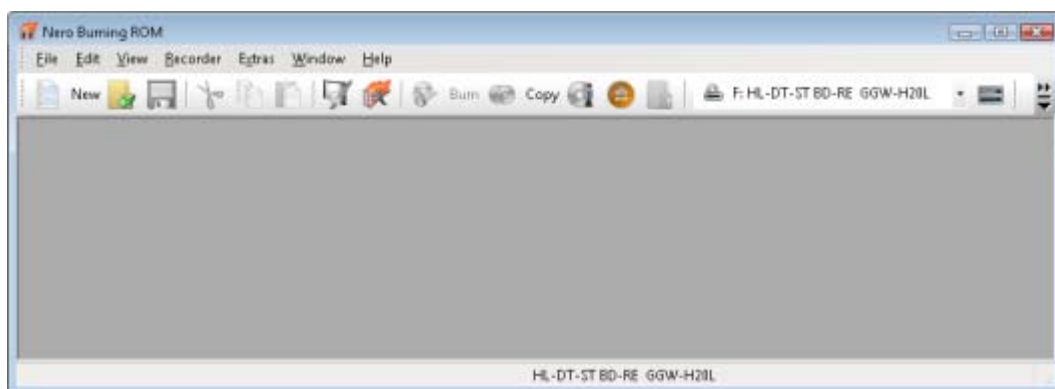
Main window with menu and toolbar

The following menus are available:

File	Provides program facilities such as opening, saving, printing, and closing. You can also open the setting options for the compilation, update the compilation, and define configuration options.
Edit	Provides editing facilities for the files in the selection screen such as cutting, copying, and deleting. You can also display the properties of a selected file and search directly for files within a compilation.
View	Provides the option to customize the toolbar and the browser area and to refresh the file browser.
Recorder	Provides recorder facilities. You can select the recorder her, start the burn process, and erase a rewritable disc. You can also eject a disc and display disc information.
Extras	Provides the option to convert audio files into other formats and to save the songs of an Audio CD on the hard drive. You can also save a data track on the hard drive.
Window	Provides the option to alter the position of the compilation area and browser area.
Help	Provides help facilities such as opening the help, and showing information about the application.

The following configuration options are available in the tool bar of the main screen.

	Opens the **New Compilation** window where you can set options for a burn or copy process.

	Opens an existing compilation.
	Saves the active compilation.
	Cuts selected elements in the compilation (selection).
	Copies selected elements of the compilation (selection).
	Pastes a selection that was cut or copied beforehand.
	Starts Nero CoverDesigner, which you can use to create labels and covers. Information about a current compilation such as title, number, and names of the files is incorporated into the document data. You will find further information in the Nero CoverDesigner manual.
	Starts Nero Express. Nero Express is a wizard-driven application based on Nero Burning ROM. You will find further information in the Nero Express manual.
	Starts the burn process by opening the **Burn Compilation** window containing the **Burn** tab.
	Starts the copy process by opening the **New Compilation** window containing the **Burn** tab.
	Displays information on the disc inserted, such as contents (if any) and capacity for instance.
	Opens the selected drive.
	Shows or hides the file browser.
Recorder selection menu	Displays available recorders.
	Opens the **Choose recorder** window where you select an available recorder for the burn process from a list.
	Opens the **Burn Label** window where you can create or load a label to print on the label or data side of a Labelflash DVD. This button is only available if a recorder that supports Labelflash is connected.
	Launches Nero CoverDesigner to create or load a label to be printed on the label side of a LightScribe disc. This button is only available if a recorder that supports LightScribe is connected.
	Displays information on the program and version number.

See also:

4   Compilation Screen

4.1   New Compilation Window

In the **New Compilation** window you can select the disc type and configure the options for the disc format on the tabs. The window basically looks the same for all disc types. The only difference is the tabs that are available. When you start Nero Burning ROM, the **New Compilation** window opens automatically. If the window is not open, click the **New** button. The window consists of a drop-down menu, a selection list, various tabs, and buttons.
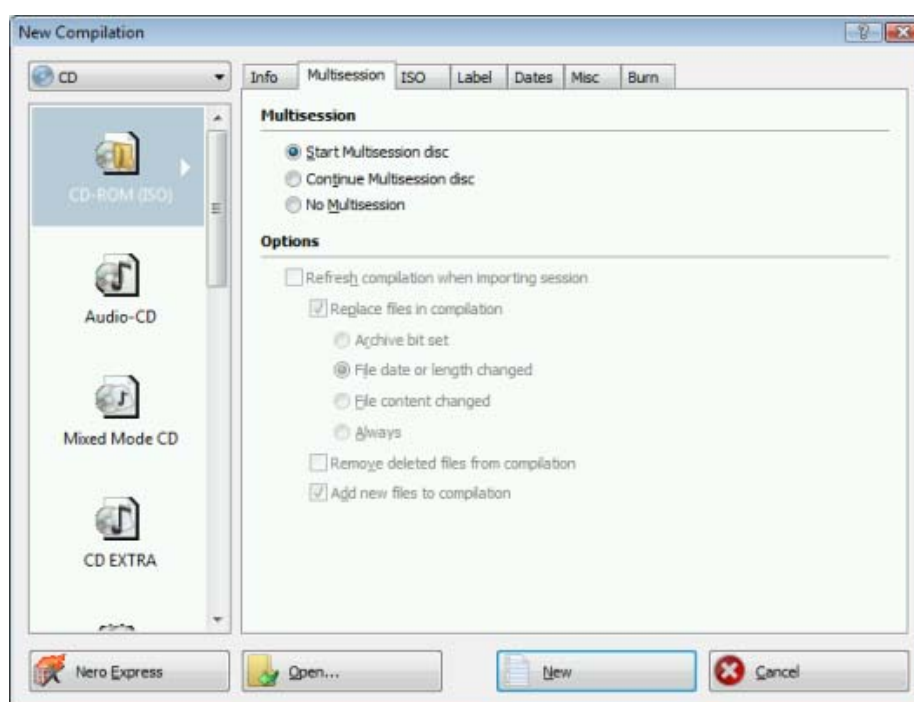
New Compilation window, CD-ROM disc type

Only those disc types supported by the recorder are displayed in the drop-down menu. If the recorder can only burn CDs, the drop-down menu is grayed out.

> Using Nero Burning ROM you can create image files for disc types that the installed recorder cannot burn. You can enable this function via the **File** > **Options** > **Expert Features** menu, **Enable all supported recorder formats for image recorder** check box. The drop-down menu in the **Compilation** window then makes available all supported disc types.

The following entries are available in the selection list:

Entry **CD/DVD-ROM (ISO)**	Creates a data CD/DVD, each file type can be burned. The burned data complies with the ISO standard.

Entry **Audio CD**	Creates a standard Audio CD that can be played on all (audio) CD players at least.
Entry **Mixed Mode CD**	Creates a CD with data and audio files in a single session. Usually a data file is followed by one or more audio files for instance (e.g. soundtrack for PC games). Older Audio CD players are often not capable of recognizing the data file as such and attempt to play it.
Entry **CD EXTRA**	Creates a multisession CD with audio and data files that are stored in two sessions. The first session contains the audio files and the second session the data. Common CD players play the first session as Audio CDs. The second session can only be used by PCs with a CD-ROM drive, it cannot be 'seen' by a normal CD player.
Entry **Copying CDs/DVDs**	Copies a source disc to a CD/DVD disc.
Entry **Video CD**	Creates a CD that can play video and/or picture files on almost all VCD and DVD players. When burning the Video CD (VCD), Nero Burning ROM automatically converts the files into the MPEG-1 format required by the Video CD.
Entry **Super Video CD**	Creates a CD that can play video and/or picture files on almost all SVCD and DVD players. The resolution is higher than with the VCD, and so the quality of the picture is usually better. When burning the Super Video CD (SVCD), Nero Burning ROM automatically converts the files to the MPEG-2 format required by the Super Video CD.
Entry **miniDVD**	Creates a CD that uses the specifications of a DVD. The miniDVD has the same technical options and qualities as a DVD. It can easily be played on a PC, whereas there is no guarantee that it can be played in all DVD players. You can use Nero Burning ROM to burn a miniDVD if the DVD video title, i.e. a complete DVD folder structure, is already available.
Entry **CD/DVD-ROM (Boot)**	Creates a bootable CD.
Entry **CD/DVD-ROM (UDF)**	Creates a data disc; all file types can be burned. The burned data complies with the UDF standard.
Entry **CD/DVD-ROM (UDF/ISO)**	Creates a data disc; all file types can be burned. The burned data complies with the ISO and UDF standards.

Entry **Audiobook CD**	Creates an audiobook CD. The file format of the original audio-book has to be in AA (Audible Audio) format. The burned audiobook CD can be read and played by CD play-ers. Since audiobooks can play for several hours, Nero Burning ROM saves the audiobook to multiple audio CDs.
Entry **DVD-Video**	Creates a DVD that delivers high-quality playback of video and/or picture files on DVD players. You can use Nero Burning ROM to burn a DVD if the DVD video title, i.e. a complete DVD folder structure, is already available.

The Nero Vision program works best for creating Video CDs and Super Video CDs. Nero Vision is an application of Nero Suite and is installed automatically together with its suite. You will find further information in the Nero Vision man-ual.

The actual entries that are available, and the actual disc types (e.g. **DVD**) that can be written to depend on the recorder used.

You can find more information on Blu-ray support at www.nero.com/link.php?topic_id=416.

The following buttons are available:

Button **Nero Express**	Starts Nero Express. Nero Express is a wizard-driven application based on Nero Burning ROM. You will find further information in the Nero Express manual.
Button **Open**	Opens a file browser where you can find and open a saved compila-tion.
Button **New**	Opens the selection screen where you can select the files for burn-ing.
Button **Cancel**	Closes the **New Compilation** window.

You can set the options for the respective disc format on the tabs in the **New Compilation** window.

Which tabs are available depends on the disc type that is selected.

The following tabs are available:

Tab **Info**	Shows statistical information on the compilation.
Tab **Multisession**	Contains options for configuring multisession discs. This tab is only available if a burner is installed.
Tab **ISO**	Contains options for configuring the ISO file system.
Tab **UDF**	Contains options for configuring the UDF file system.
Tab **Label**	Defines the label of the CD.
Tab **Date**	Allows you to define the date of the compilation and of the associated files. You can also specify a validity period for the disc. You can access the data regardless of the validity period specified.
Tab **Misc**	Defines whether and which files are stored in the buffer memory. If you posses a Lightscribe recorder you can create the label here or select what is to be printed. For the CD-ROM (ISO) disc type, you can convert the code for an AVI video here to make it compatible with Xvid/MPEG -4 or DivX. We recommend that you only convert the code if you have experience with FourCC codes and AVI videos.
Tab **Audio CD**	Contains options for configuring audio files. You can also enter additional information about the CD.
Tab **CDA Options**	Defines the strategy used by Nero Burning ROM for handling CD-DA files from a source audio CD.
Tab **CD EXTRA**	Contains options for configuring albums.
Tab **Video CD**	Contains general options for Video/Super Video CD.
Tab **Menu**	Allows you to configure the appearance and content of the menu for the Video/Super Video CD.
Tab **Audiobook CD**	Displays statistical information on the audiobook CD, such as the number of CDs required.
Tab **Boot**	Contains options for configuring a bootable disc.

Tab	Contains options for configuring burning.
Writing	

See also:

4.2   Selection Screen

The selection screen is the starting point for work that you want to do on compilations. The selection screen is displayed in the main screen after you select the disc type and format and click the **New** button. The selection screen consists of the compilation area, the browser area and a capacity scale.
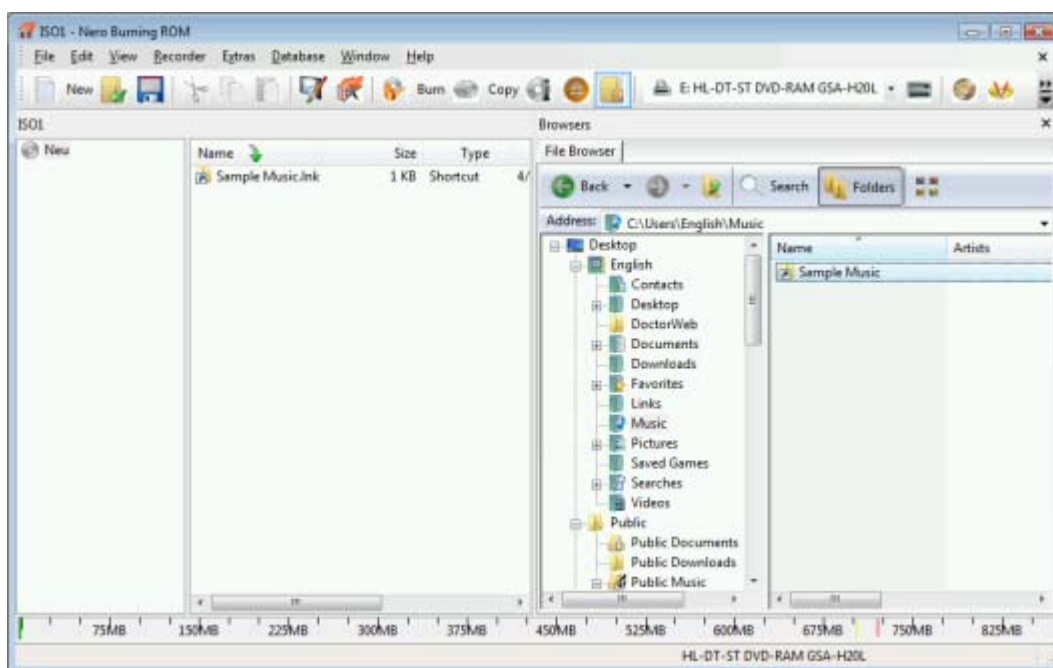
Selection Screen

The Compilation Area is named after the relevant compilation. Files and folders are compiled here for burning. In the browser area (Browser), you can find the elements that you want to burn. The File Browser is similar to other file browsers and provides a toolbar and address bar with typical functionality.

The bottom margin of the screen contains a capacity scale in MB for data discs or minutes (min) for Audio CDs. The exact size of the scale will depend on which disc type you have selected.

If the Browser Area is hidden, you can show it again using the button.

When you are compiling files, a capacity bar indicates how much space the files need on the disc. The color of the capacity bar indicates whether the data will fit on the disc or not:

Green capacity bar	The data will fit on the disc.
Yellow capacity bar (from the yellow mark on the scale)	The data might fit on the disc. The size of the disc that has been inserted will determine whether the data will fit or not.
Red capacity bar (from the red mark on the scale)	The data will not fit on the disc. (Unless you have inserted an oversize disc.)

The yellow and red marks are set by default for discs that are commercially available. The disc type you have selected will determine the exact scale value.

Capacity of the CD recordable disc

For example, blank CDs are available with a capacity of 650 MB or 700 MB. Therefore the yellow mark is set for CDs at 650 MB and the red at 700 MB.

Display the Capacity Bar

If the capacity scale is hidden, you can show it again by clicking the **File** > **Options** > **Compilation** menu and by selecting the check box **Show compilation size in the Nero status bar**.

5   Data Disc

5.1   Compiling Data CDs/DVDs

With Nero Burning ROM you can compile and burn all types of files and folders. If a DVD recorder is installed on your computer, you can burn both data CDs, and data DVDs. If you have a CD recorder, you can only burn data CDs and the option for burning a DVD is already grayed out in the start screen. The procedure for both compilation methods is identical.

SecurDisc recorder

If a SecurDisc recorder is installed on your computer, you can select it to display the relevant entry in order to burn a SecurDisc CD or DVD. The procedures for both adding data and burning a SecurDisc data CD/DVD are the same as the compilation method for a standard data CD/DVD.

The Image Recorder is also suitable for creating an image of a disc type not supported by the connected recorder. You can therefore create a DVD image, for instance, without having installed a DVD recorder. You can write the image to a disc at any time.

Nero Burning ROM supports virtual search folders in the Windows Vista operating system. The search is selected by dragging it into the compilation area. If you want to select the files of the search folder, you must open the search folder and drag the files into the compilation.

Blu-ray recorder

If a Blu-ray recorder is installed on your computer, you can select it to display the relevant entry in order to burn a Blu-ray disc. The procedures for both compiling and burning a Blu-ray data disc are the same as the compilation method for a data CD/DVD.

To create a data CD/DVD, proceed as follows:

1. Select the desired CD format (**CD**, **DVD**) from the drop-down menu in the **New Compilation** window. (In the case that the **New Compilation** window is not opened, it can be opened by clicking the **New** button on the main screen.)
   → The selection list shows the compilation types that can be burned.
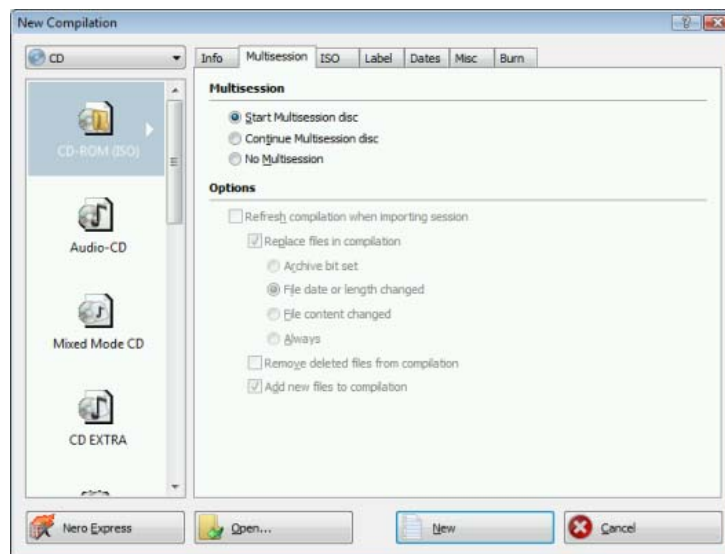
New Compilation Window

2. Select the desired compilation type for a data disc from the selection list (**CD/DVD-ROM (ISO)**, **CD/DVD-ROM (UDF)**, or **CD/DVD-ROM (UDF/ISO)**).

➔ The tabs with the configuration options that are valid for this compilation type are displayed.

3. Click the **New** button.

➔ The **New Compilation** window is closed and the selection screen is displayed.
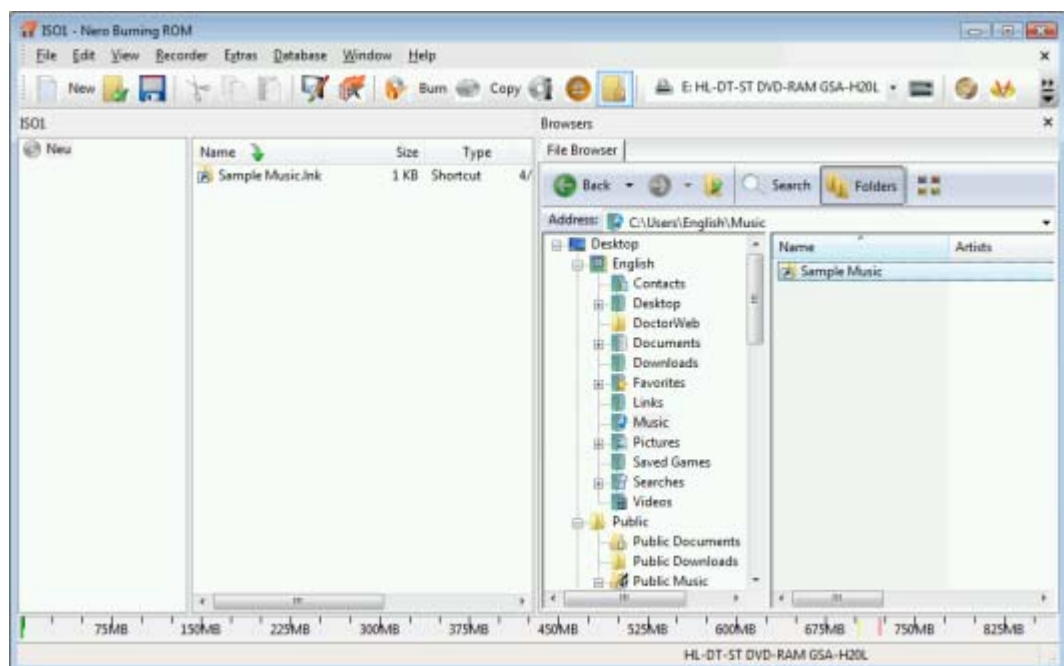
4. Select the files/folders that you want to burn from the browser area.

5. Drag the required files/folders into the compilation area on the left side.

→ The files are added to the compilation and displayed in the compilation screen. The capacity bar indicates how much space is required on the disc.

> In Nero Burning ROM, there is the option of defining filters for individual files or folders by dragging files or folders into the compilation areas with the depressed right mouse button. For instance, it is possible to filter for a particular type of file (*.doc, *.xls, *.txt) or select which type of file is not to be taken up in the compilation area.

> It is very easy to hide files in data CD/DVD compilations for additional protection or for security reasons so that they do not appear on the normal display. The files behave in the same way as other hidden system files that are hidden by default, but can easily be displayed. To hide files, right-click the required file, select the **Properties** option and then select the **Hide** check box.

6. Repeat the previous step for all files that you want to add.

7. Click the **Burn** button.

→ The **Burn Compilation** window is opened.

8. Set the options you require in the tabs.

→ You have successfully compiled a data CD/DVD and can now burn this compilation.

See also:

5.2 Enabling SecurDisc Settings

SecurDisc is a hardware and software technology with which you can create discs with special protection properties, such as data integrity, reconstructability, encryption and duplication protection. Such discs can be created with SecurDisc supported drives and Nero Burning ROM and read from any drive with InCD or InCD Reader.

> The **Copy protection** feature is only available for SecurDisc Data DVD.
>
> To be able to view copy-protected files, you will need a special application called SecurDisc Viewer, which can be downloaded free of charge at www.securdisc.net.

To enable SecurDisc settings, proceed as follows:

1. If you want to enable the password protection for all files:

1. Enable the **Password protection** check box on the **SecurDisc** tab.

→   The **SecurDisc – Protect Data** window is opened.
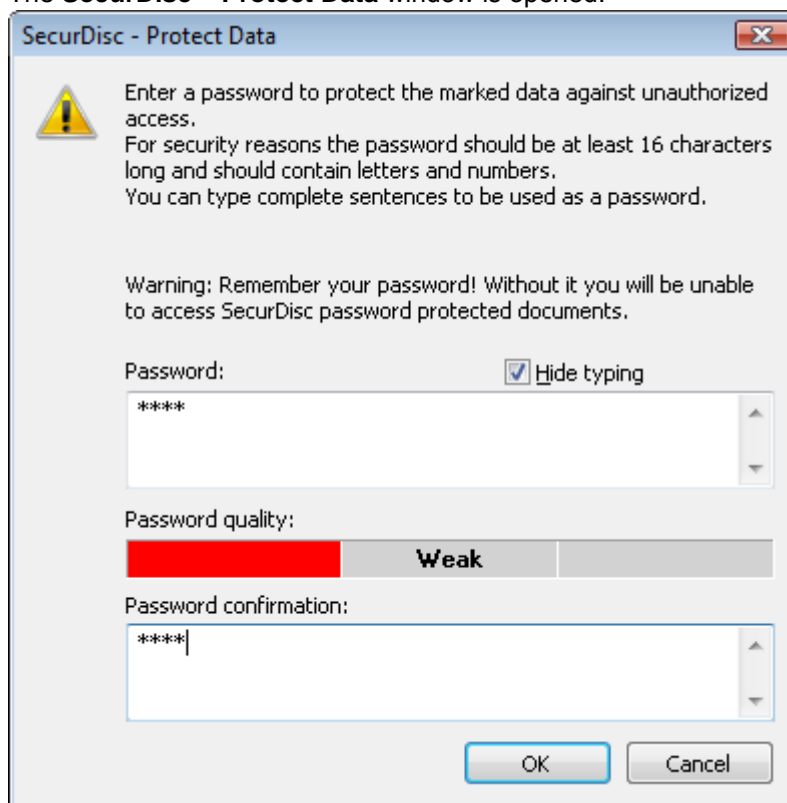
2. Enter the desired password in the **Password** input area and then click the **OK** button.

> When appropriate, a wizard offers suggestions in an additional **Tips** dialog box when entering and selecting the password. The wizard estimates the security level, i.e. the quality of the password, during entry.

> You can selectively enable the password protection for individual files by marking the desired file in the compilation screen and clicking the **Protect** button.

2. If you want to sign the disc with a digital signature:
1. Select the **Digital signature** check box on the **SecurDisc** tab.

→ The **SecurDisc – Digital Signature** window is opened.

```
SecurDisc - Digital Signature                                    ▣

     🔑   To digitally sign the disc you need a key.

          Please select a private key from the list below.
          Keep this key confidential and do not distribute it.

          Send only the corresponding public key to the disc recipient.

          [                                              ▼ ]

                                              [  Browse...  ]
          ─────────────────────────────────────────────────────

          Nero can create a digital key for you in case you do not have
          one or you want to create a new one.

                                              [   Start    ]
          ─────────────────────────────────────────────────────

                        [   OK   ]   [  Cancel  ]
```
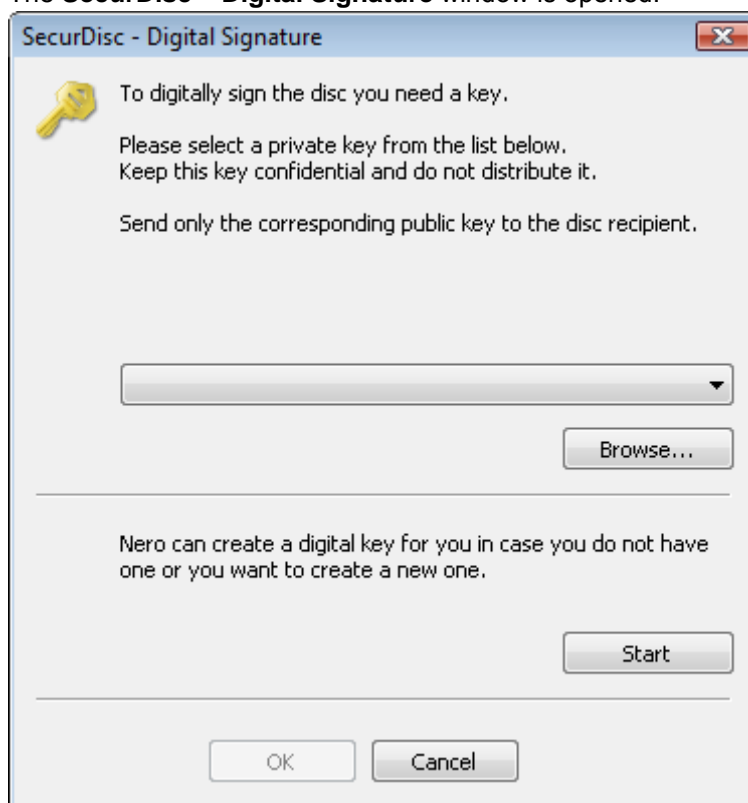
2. If you have already created a digital key, click the **Browse** button and select the key.
3. If you want to create a digital key, click the **Start** button.

→ The **SecurDisc – Create Digital Key** window is opened.

4. Read the instructions and click the **Next** button.

→ The **SecurDisc Key Creation Process** window is opened.

5. Move your mouse at random until the creation process is complete.

→ You can monitor the status of the creation process using the progress bar. The **Next** button is enabled as soon as the process is complete.

6. Click the **Next** button.

→ The **SecurDisc – Key Creation Completed** window is opened.

7. Enter a file name for the key you have created and click the **Finish** button.

→ The **SecurDisc – Digital Signature** window is opened again and the selected key appears in the drop-down menu.

8. Click the **OK** button.

→ The corresponding window is opened to inform you that the disc is being digitally signed with the selected key.

9. Click the **OK** button.

> You can pass on the relevant public key to recipients to enable them to verify the signature.

3. If you want to copy-protect PDF files, select the **Copy protection** check box on the **Se-curDisc** tab.
   → All PDF files are copy-protected. The check box **Disable copy protection by password** is displayed.

4. If you want to permit duplication of the copy-protected data after entering a password:
   1. Select the **Disable copy protection by password** check box.
      → The **SecurDisc – Allow Duplication by Password** window is opened.
   2. Enter the desired password in the **Password** input area and then click the **OK** button.

5. If you want to enhance the burning speed by limiting the data redundancy or to configure the data redundancy:
   1. Select the **Limit data redundancy** check box on the **SecurDisc** tab.
      → The **Number of redundancies** field is enabled.
   2. Select the desired redundancy level.

   > If the **Limit data redundancy** check box is disabled, the disc will be filled completely with copies of the chosen data and checksums. A display panel in the compilation screen indicates the current redundancy level.

   > A redundancy level of 1,3 means no redundancy and a redundancy level of 9 means excellent redundancy.
   >
   > We recommend a redundancy level of at least 2,5.

   → You have enabled SecurDisc settings according to your requirements and can now burn the CD/DVD.

5.3 Defining Options

5.3.1 Multisession Settings

The **Multisession** tab provides the option to create multisession discs for data discs. Multisession discs can be burned in multiple sessions until you have reached the maximum disc capacity. A session is a self-contained data area that is burned using a single process, and consists of a lead-in (with the table of contents), one or more tracks, and a lead-out. Discs without the multisession option, e.g. Audio CDs, are burned in a single session.

If a new multisession disc is being started, Nero Burning ROM also saves (if possible) the point of origin for the files. This information is used when continuing the multisession disc.

If a multisession disc is being continued, Nero Burning ROM automatically sets a cross reference to the imported session, i.e. the table of contents for the imported session is copied to the table of contents for the current session. You must define which session is being imported at the start of the burn process. The files in the previous sessions are retained and continue to take up space.

In this case Nero Burning ROM automatically verifies whether the correct multisession disc has been inserted for continuation. If not, the disc is ejected.

If you disable the **Finalize disc** check box on the **Burn** tab, you can always burn additional sessions on the disc, but then only the last session will be visible and you will only be able to access data from the final session.

Multisession disc

Multisession discs are particularly suitable for backing up important files burned on a regular basis.

Multisession Tab

The following configuration options are available on the **Multisession** tab in the **Multisession** area:

Option button	Burns the selected compilation in one session to the disc.
Start Multisession disc	If the disc already contains sessions, you can also select this option. Sessions are then not imported and cross references are not set.

Option button **Continue Multisession disc**	Continues a multisession disc by burning an additional session to a disc with at least one session. Cross references to the imported session are set in the process.
Option button **No Multisession**	Creates a disc without a multisession.

5.3.2 ISO Settings

The **ISO** tab provides options for configuring the ISO file system.
ISO 9660 is a system-independent standard. It can be read on all operating systems. The following features apply:

- Permits eight characters (Level 1) or 31 characters (Level 2) for the file name.
- Permits eight characters for the folder name.
- Restricts the maximum directory depth to eight levels (including root folder).
- The characters A-Z, 0-9 and the underscore (_) are permitted.

In the **ISO** tab, in the area **Relax Restriction**, the restrictions imposed by the selected file system can be relaxed. For example, you can allow a higher path level or more than 64 characters for the Joliet name.

> If it is to be possible to read the disc on all operating systems, select ISO 9660 as the file system and uncheck all boxes in the **Relax restrictions** area.

An advisory message appears in the **ISO** tab in the **Information** area if the disc cannot be read on all operating systems.

> If the disc is to be used mainly on Windows computers and you want to use lowercase letters and foreign language characters for the file names, select **ISO 9660 + Joliet** as the file system.

The following setting options are available on the **ISO** tab in the **Data** and **File** areas:

Drop-down menu **Data mode**	Selects the mode for the data. **Mode 1** and **Mode 2/XA** are available. Newer drives can easily read Mode 1 and Mode 2/XA CDs. However, some older drives cannot read Mode 1 discs correctly. In the case that the disc is to be able to be read in any case on older drives, select the Mode 2/XA format.
Drop-down menu **File system**	Selects the file system that is used for the data. **ISO 9660 only** and **ISO 9660 + Joliet** are available. **ISO 9660 only**: ISO format alone is used. **ISO 9660 + Joliet**: ISO format is used and is enhanced by the Joliet standard.

Drop-down menu **Length of file name**	Defines the possible length of the file name. **Level 1** and **Level 2** are available. In level 1 the file name can be eight characters long and the file name extension (e.g. *.doc) three characters. In level 2 the file name can be 31 characters long.
Drop-down menu **Character set**	Defines the font used.

5.3.3 UDF Settings

The **UDF** tab provides options for configuring the UDF file system. The UDF standard was developed by Osta (Optical Storage Technology Association) in response to the requirements of DVDs. The standard works on all platforms.

The following setting options are available in the **Options** drop-down menu:

Entry **Automatic Settings**	Sets options automatically for the UDF file system. We recommend that you select this entry.
Entry **Manual Settings**	Enables you to manually define the UDF partition type and the file system version.
Entry **Enable Xbox compatibility mode**	Creates a disc that is compatible with Xbox. This entry is available if the **No Multisession** option button is selected on the **Multisession** tab.

A disc that is compatible with Xbox cannot be created as a multisession disc.

5.4 Saving Data Track

With Nero Burning ROM you can save a data disc as an image file. The image file can later be burned to a recordable disc. The result is a copy of the original data disc.

To save the data disc as an image file, proceed as follows:

1. Insert the data disc in a drive.
2. Click the **Extras** > **Save data tracks** menu.
   → The **Select Track** window is opened. The tracklist shows you the sessions and data tracks that are found on the disc. Due to the technical reasons, only the first data track of the first session can be saved.
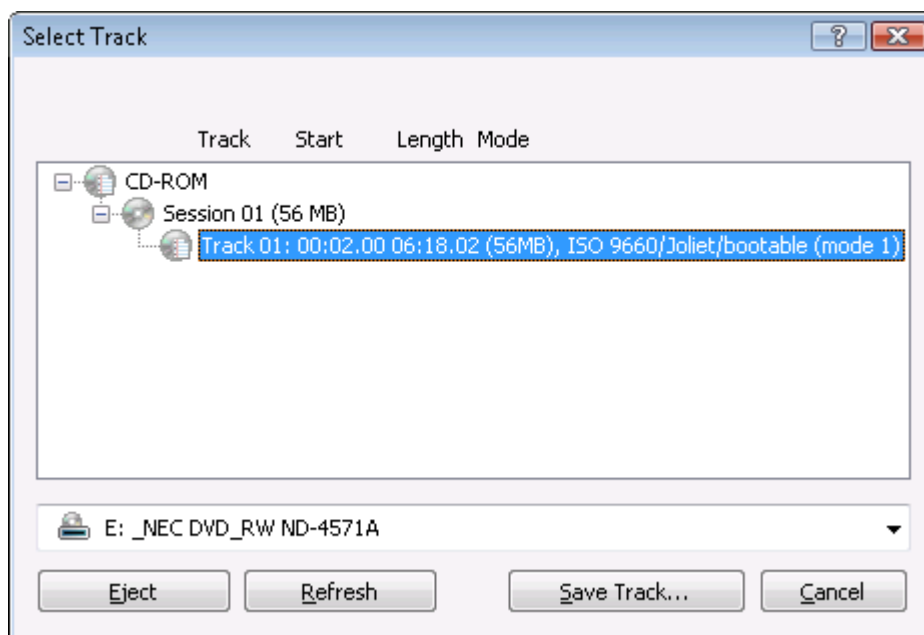
Select Track

3. Select the first data track.

4. Click the **Save Track** button.
   → The **Save As** window is opened.

5. Select a file name and a storage location.

6. In the **Save As** drop-down menu, select the desired output format (ISO or NRG) for the image file.

7. Click the **Start** button.
   → The **Progress** window is opened and displays the progress made while saving. When the save process is complete, the window is closed automatically.
   → You have successfully created an image file starting from a data disc. Now you can burn the image file to a disc.

5.5   Check Point Media Encryption CD/DVD

With Nero Burning ROM and Check Point Media Encryption you can create discs with spe-
cial encryption security protection.

> This feature is only available if all of the following requirements are fulfilled:
>
> (1) Check Point Endpoint Security Media Encryption, version R73 or later, is in-
> stalled on your computer.
> (2) You are allowed to create Check Point Media Encryption CD/DVDs.
> (3) You have a special serial number.

The procedure for compiling and burning a Check Point Media Encryption disc is basically
the same as the procedure for compiling and burning data discs. Be sure to select the
CD/DVD-ROM (Check Point) entry in the **New Compilation** window.
When starting the burn process, a window, which originates from Check Point Media Encryp-
tion, will be opened. After entering security information, e.g. a password for encryption as
defined in your Check Point Media Encryption settings, Check Point Media Encryption then
encrypts the data. When the encryption is finished, the window is closed and Nero Burning
ROM continues the burn process. Depending on your Check Point Media Encryption set-
tings, a decryption tool is burned on the disc, allowing another user, who does not have
Check Point Media Encryption, to access to the data by entering the password.

> The encryption of the data does not take place in Nero Burning ROM. Nero AG
> is not responsible for the data encryption and the decryption tool. These fea-
> tures are provided by Check Point Software Technologies.

6 Audio CD And Audio Files

6.1 Compiling Audio CDs

Using Nero Burning ROM you can create an Audio CD that contains music files. It can be played using all standard CD players. To compile an Audio CD, source files with different audio formats (e.g. MP4, MP3 or WMA) are automatically converted into Audio CD format before being burned.

	Some CD players cannot play CD-RWs. Use CD-R discs to burn Audio CDs.

To create an Audio CD, proceed as follows:

1. Select the **CD** entry from the drop-down menu in the **New Compilation** window. (In the case that the **New Compilation** window is not opened, it can be opened by clicking the **New** button on the main screen.)

2. Select the **Audio CD** compilation type from the selection list.

→ The tabs with the configuration options that are valid for this compilation type are displayed.

3. Click the **New** button.

→ The **New Compilation** window is closed and the selection screen is displayed.

4. Select the audio files that you want to burn from the browser area on the right side. The audio file can come from the hard drive or from an Audio CD. You can also choose an M3U playlist as a source.

5. Drag the desired audio files into the compilation area on the left side.

→ The files are added to the compilation and displayed in the compilation screen. The capacity bar indicates how much space is required on the disc.

6. Repeat the previous step for all audio files that you want to add.

7. Customize the properties of the audio file to suit your requirements.

8. Click the **Burn** button.

→ The **Burn Compilation** window is opened.

9. Set the desired options in the **Audio CD** and **CD-DA Options** tabs.

→ You have successfully compiled an Audio CD and can now burn this compilation or change the audio file properties first.

See also:
▤ Selection Screen→ 16

6.1.1 Customizing Properties of The Audio File

You can display and/or make changes to the audio file properties on the **Track Properties**, **Indexes, Limits, Splits** and **Filters** tabs of the **Audio Track Properties** window. To open the window, mark an audio file in the compilation screen for Audio CDs and click the **Edit** > **Properties** menu.

6.1.1.1   Track Properties Tab

On the **Track Properties** tab you will find basic information on the selected file in the **Source information** area.
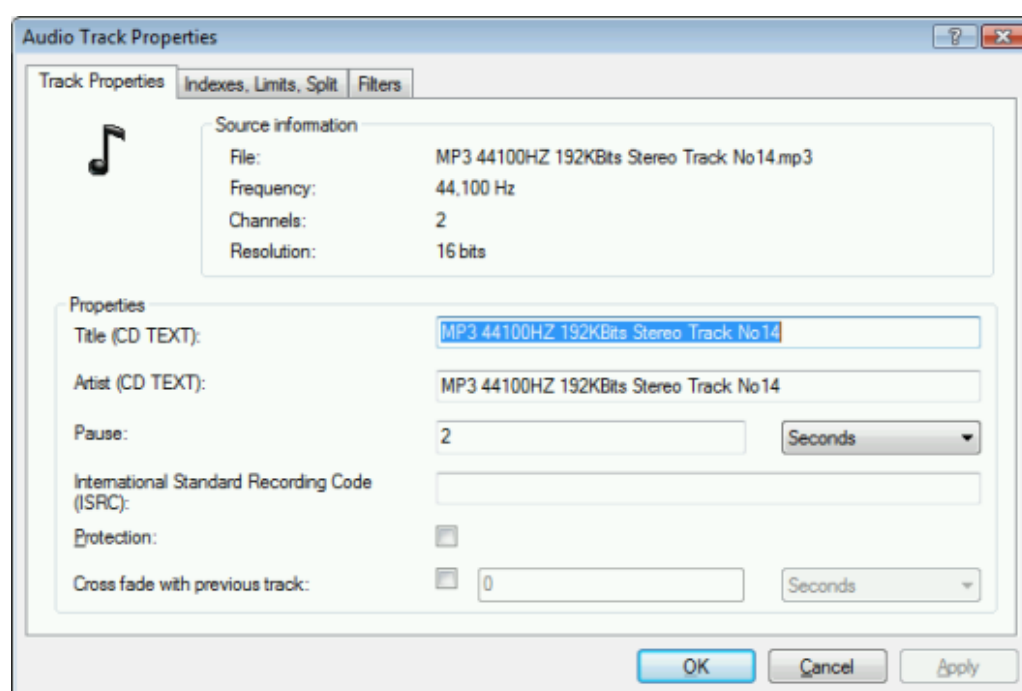
Track Properties Tab

The following input areas are available in the **Properties** area:

Input field	
Input field **Title (CD TEXT)**	Defines a title which is saved as CD text. CD players that support CD Text show the title name entered here.
Input field **Artist (CD TEXT)**	Defines the artist which is saved as CD Text. CD players that support CD Text show the artist's name entered here.
Input field **Pause**	Defines the length of the pause in seconds or frames between the selected audio file and the next one.

Input field **International Standard Recording Code (ISRC)**	Identifies the CD title using a 12-character digital code. The ISRC is entered in the subcode and included silently. If you do not know the ISRC, you should leave this input field blank.
Check box **Copy protection**	Enables copy protection.
Check box **Cross fade with previous track**	Defines a crossfade between this and the previous audio file. You can specify the length of the crossfade in seconds or in sectors.

6.1.1.2   Indexes, Limits, Split Tab

On the **Indexes**, **Limits**, **Split** tab you can set and delete indexes and split audio files to create two or more shorter ones. The tab consists of the **Oscilloscope** and **Positions** areas.
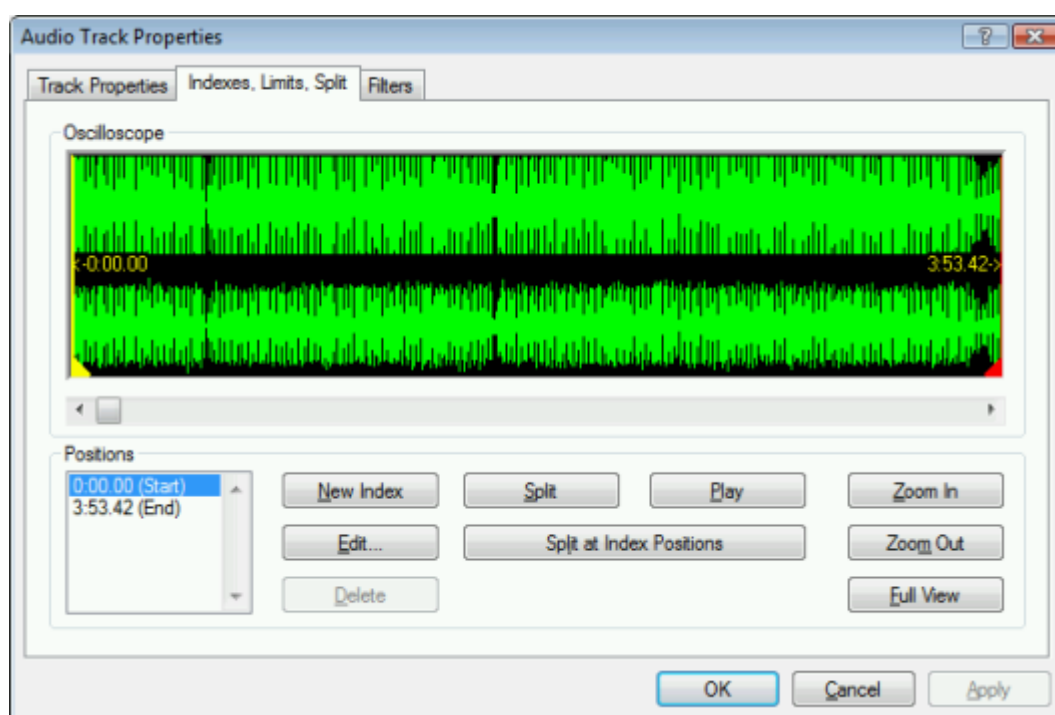
Indexes, Limits, Split Tab

Audio files are displayed graphically in the **Oscilloscope** area. The following configuration options are available in the **Positions** area:

Selection lists **Start/End**	Shows the positions for the beginning and end of the audio file on the CD.
Button **New Index**	Sets a new index position at the selected position. For the CD player this is the position from which a new song starts, and the player can also jump to it directly. However, not all CD players support this feature.
Button **Edit**	Opens the **Set Track End** dialog box. You can enter the exact position of a split.
Button **Delete**	Deletes a selected index.
Button **Split**	Splits the audio file at the marked position.
Button **Play**	Plays the audio file from the marked position. During playback, the **Stop playing** button is displayed.
Button **Stop playing**	Stops playback of the audio file. If playback is stopped, the **Play** button is displayed again.
Button **Split at Index Positions**	Splits the audio file at the set index positions.
Button **Zoom In**	Enlarges the graphical representation of the audio file.
Button **Zoom Out**	Reduces the graphical representation of the audio file.
Button **Full View**	Displays a graphical representation of the entire audio file.

6.1.1.3 Filters Tab

The **Filters** tab includes filters that improve or change the quality of the music. The so-called non-destructive procedure is used for processing, i.e. the actual recording is not changed, but flags are simply set that can be canceled at any time. No additional audio data is created. The audio files are not actually changed until they are written.
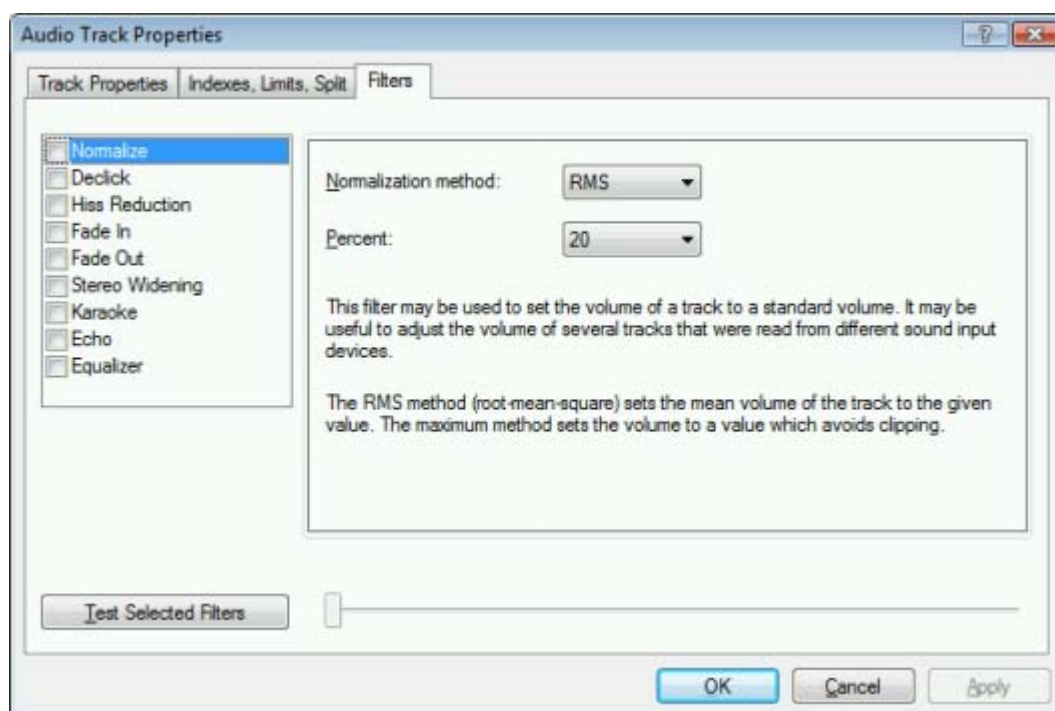
Audio Track Properties window, Filters tab

The following configuration options are available in the **Audio Track Properties** window:

Check box **Normalize**	Sets the volume of an audio file to a preset value. This filter can be useful to bring the volume of files originating from different sources into line with one another.
Check box **Declick**	Removes clicking and scratching noises, such as those on old LPs for example.
Check box **Hiss Reduction**	Reduces or removes the hiss on an audio file. All frequencies below a certain threshold (hiss level) are removed.
Check box **Fade In**	Fades in the volume of an audio file from zero to full volume. This filter can be useful for shortening files.
Check box **Fade Out**	Fades out the volume of an audio file from full volume to silence. This filter can be useful for shortening files.
Check box **Stereo Widening**	Increases/reduces the stereo effect of an audio file. This filter only works if the original file was recorded in stereo.
Check box **Karaoke**	Fades out the vocals on an audio file. This is done by fading out the parts of a song that are the same in both stereo channels.
Check box **Echo**	Adds an echo to the audio file.

Check box **Equalizer**	Opens an equalizer so you can change the volume, bass, and pitch in different frequency ranges.
Button **Test Selected Filters**	Plays the audio file and applies the activated filters. During play-back, the configuration options for the filters can be changed, allowing the effect to be controlled.

6.1.2 Defining Options

6.1.2.1 Audio CD Settings

The **Audio CD** tab provides options for setting the Audio CD.

Audio CD Tab

The following configuration options are available on the **Audio CD** tab in the **General** area:

Check box **Normalize all audio files**	Enables a filter that brings the volume of the audio files to be burned into line with one another. This is particularly recommended if the audio files originate from different sources.

Check box **No pause between tracks**	Allows the audio files to merge into one another on the audio CD without a pause (just like in live recordings). If the check box is cleared, there are pauses of two seconds between the audio files.

The following configuration options are available on the **audio CD** tab in the **CD Text** area:

Check box **Write on CD**	Enables the option for writing CD text. With CD players that support CD text, the title of the CD, the name of the audio file as well as the name of the artist appear in the display.
Input field **Title**	Defines the label of the audio CD.
Input field **Artist**	Defines the artist.

In the **Additional Information** tab you can enter additional information about the Audio CD such as the producer or comments.

6.1.2.2   CDA Settings

The **CDA Options** tab provides options for configuring CD-DA files on the Audio CD. The **CDA file strategy** area allows you to select the strategy that Nero Burning ROM should use for handling selected audio files from a source audio CD. In general there are two methods:

■ Read the audio file and store it in the cache temporarily. The Audio CD can be burned in disc-at-once mode, which supports CD Text.

■ Create a reference to the audio file and read it shortly before burning (track reference). The audio CD can only be burned in track-at-once mode.

The following setting options are available on the **CDA Options** tab in the **CDA File Strategy** area:

Drop down menu entry **Diskspace strategy**	Saves the audio files temporarily to the Nero Burning ROM cache. If there is no space available, a reference is created to the audio file and is not read until shortly before burning. This entry is selected by default.
Drop-down menu entry **Tempfile strategy**	Saves the audio files temporarily to the Nero Burning ROM cache. If there is no space available, an error message appears.
Drop-down menu entry **Reference strategy**	Creates a reference to the audio file and reads it shortly before burning. The source medium can only be a CD/DVD drive, not a recorder. The disc can only be burned in track-at-once mode.

Drop-down menu entry **Device dependent strategy**	Creates a reference to the audio file if a CD/DVD drive is available. Otherwise the tempfile strategy is used.
Button **Info**	Displays more detailed information on the CDA file strategy.

The following setting options are available on the **CDA Options** tab in the **Drive** area:

Selection list **Drive**	Lists recognized drives and burners.
Drop-down menu **Read speed**	Selects the speed at which the CD is read.
Check box **Cache track on hard drive before burning**	Saves the audio file in the cache before burning.

The following setting options are available on the **CDA Options** tab in the **Advanced** area:

Check box **Remove pause at the end of audio tracks**	Removes silence at the end of individual audio files, i.e. music tracks transition smoothly from one to the next.

6.2   Mixed Mode CD And CD EXTRA

With Nero Burning ROM you can compile CDs that include both audio and data files.

The following compilation methods are available:

- Mixed Mode CD
- CD EXTRA

A Mixed Mode CD includes the data and the audio files in one session. CD EXTRA includes the audio files in the first session and the data files in the second session.
The procedure for compiling the audio and data files is basically the same as the procedure for compiling data or music CDs. Please be sure to select the corresponding entry in the **New Compilation** window. The selection screen includes a compilation area for audio files and one for data files.

See also:

6.2.1 CD-Extra Settings

The **CD EXTRA** tab provides configuration options for albums.

The following information is available in the **Info** area:

Display panels	Displays information on the compilation.

The following configuration options are available in the **Album** area:

Input field **Album identification**	Defines a name for the album. This is particularly useful when the album is to comprise several CDs.
Input field **Number of volumes in album**	Defines the number of discs that the compilation should contain.
Input field **Album sequence number**	Defines the album number of the current disc.
Button **Pictures**	Opens the **CD EXTRA Pictures** window where you can select the pictures for the front and flipside of the CD and define the picture format.

The following configuration options are available in the **Localization** area:

Display panel **Languages**	Displays available languages. When you select a language, you can add the title for the album in the **Album title** text box. Each language can contain a different title.
Button **Add**	Opens the **New Language** window where you can select a new language from a country list.
Button **Delete**	Deletes the selected language.
Input field **Album Title**	Adds an album title to the language highlighted in the **Languages** selection list.

6.3 Compiling an Audio Book CD

With Nero Burning ROM you can compile audio book files and burn them as an audio book CD, i.e. in the form of an Audio CD. You can then play it on any standard CD player. Since audiobooks can play for several hours, Nero Burning ROM saves the audiobook to multiple Audio CDs. During the burn process, you are prompted to insert new blank discs.
The procedure for compiling audio book CDs is basically the same as the procedure for creating an Audio CD.

6.4   Automatic Music Recognition

With Gracenote MusicID Nero Burning ROM can identify music files. So called metadata such as artist, title, and genre are accessed from the Gracenote Media Database and displayed in Nero Burning ROM. The identified metadata is written to the music file and is then available.
Identification is possible for single audio files as well as complete original Audio CDs.

If the metadata of the Audio CD is not yet included in the database then you can enter it and make it available. The metadata is sent to Gracenote and added into the database.

With Gracenote you can have audio files identified out of any sort of compilation. This is particularly useful when audio files are not named or are only partially named. The metadata that is made available by Gracenote is used for the compilation and is written into the audio files. In this way your music collection is correctly tagged with all information.

During the following actions, original Audio CDs can be automatically identified in Nero Burning ROM with Gracenote MusicID.

- Copying Audio CD
- Saving Tracks from the Audio CD to Hard Drive

> Music recognition technology and related data are provided by Gracenote®. Gracenote is the industry standard in music recognition technology and related content delivery. For more information, please visit www.gracenote.com.

6.4.1   Identifying Audio Files

You can have the added audio files in the music compilations identified with Gracenote and access metadata such as artist and title from the Gracenote Media Database.

To do this, proceed as follows:

1. Select the type of compilation to burn a music CD.
→   The compilation screen is displayed.

2. Add audio files from the hard drive to the music compilation.

3. Select one or more audio files in the compilation.

4. Right-click to open the context menu.

5. Select the **Get Metadata** entry.
→   The audio files are analyzed and the required information is sent to Gracenote. The **Edit MetaData** window is opened. The metadata received by Gracenote is displayed in the **New Info** area.
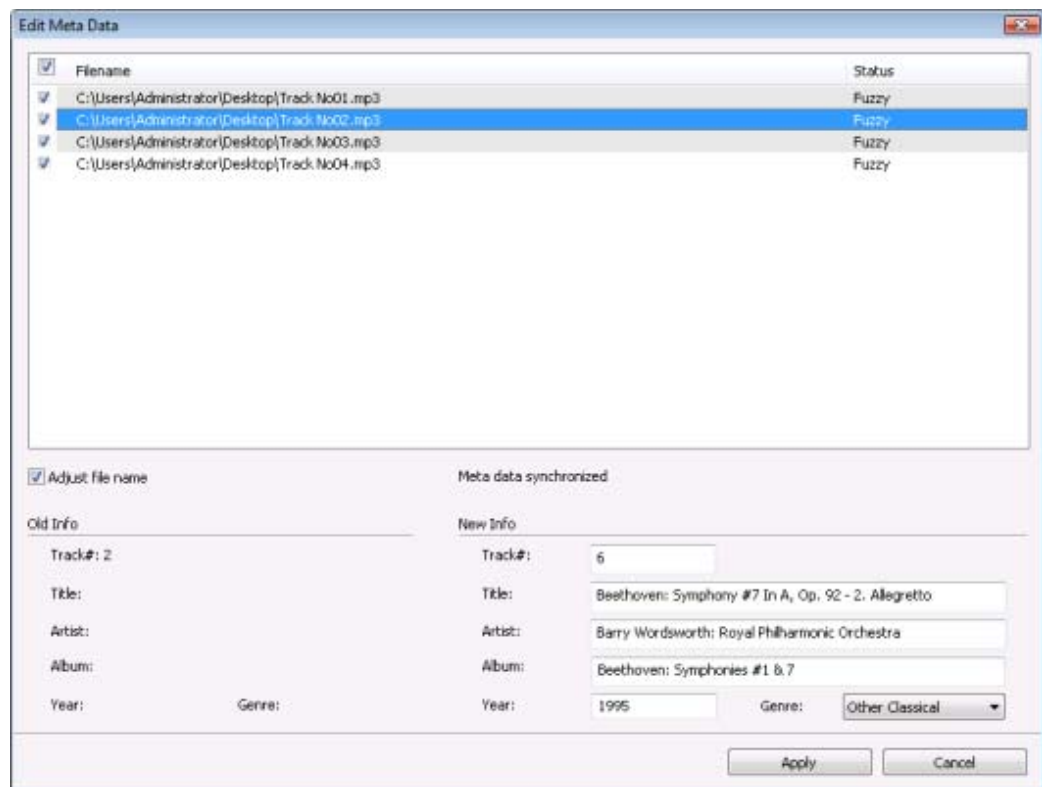
Edit Metadata window

6. If necessary, edit the metadata, e.g. track number, title, artist, album title, year, and genre.

7. Click the **Apply** button.
   → The **Edit Metadata** window is closed.
   → The metadata is written into the audio file and accordingly shown in Nero Burning ROM.

6.5   Copy Audio CDs to Hard Drive

Using Nero Burning ROM you can save audio files from an Audio CD on the hard drive. In the process, the files are encoded, i.e. converted into a format that the computer can read. The audio file is usually also compressed.

The Audio CD can be automatically identified with Gracenote. So called metadata such as title, genre, and track title are accessed by the Gracenote Media Database and associated to the tracks. That way you have audio files that are accurately and fully named after the encoding process.

> Music recognition technology and related data are provided by Gracenote®. Gracenote is the industry standard in music recognition technology and related content delivery. For more information, please visit www.gracenote.com.

Audio files from copy-protected Audio CDs cannot be saved.

To save audio files, proceed as follows:

1. Click the **Extras** > **Save Audio Tracks** menu.
→ The **Save Audio Tracks to Hard Drive** window is opened.
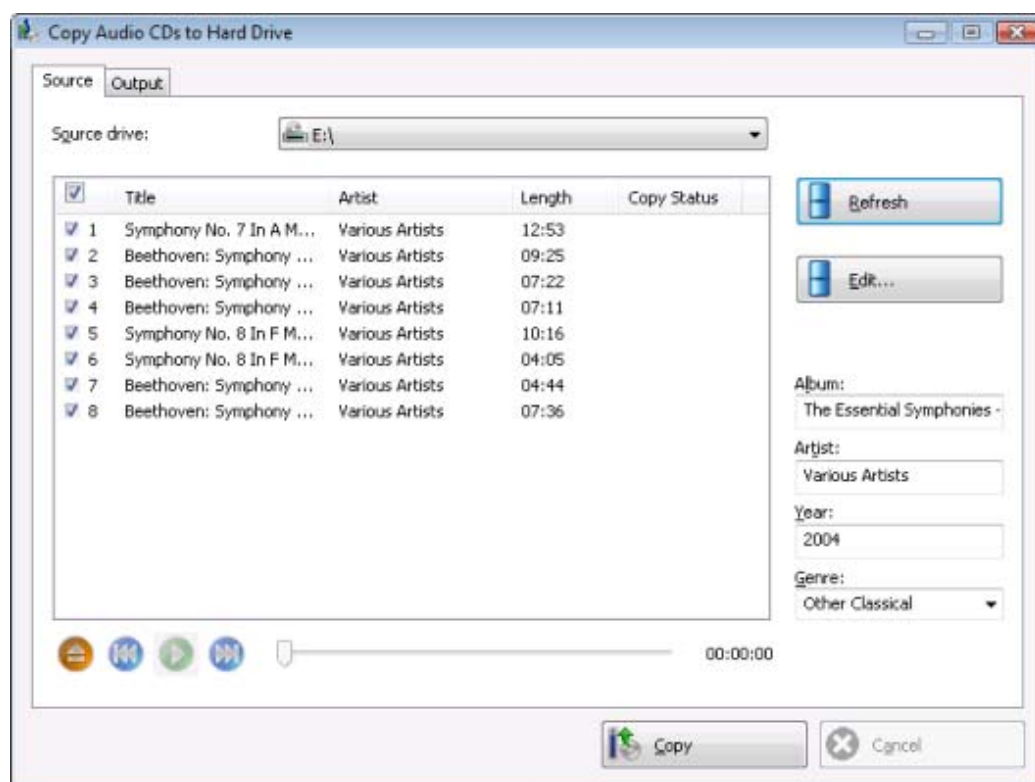
Copy Audio CDs to Hard Drive

2. Insert your Audio CD into a drive.
→ The disc is being analyzed and the required information is sent to Gracenote. If an exact matching entry is found in the Gracenote Media Database then that metadata will be used and displayed.
→ If several entries are found then the **Matches** window opens and the metadata-records in question are displayed.

3. Select the metadata-record that matches your Audio CD.

4. Click the **Send New Data** button if none of the metadata records match your Audio CD.
→ The **Edit MetaData** window is opened.

Edit MetaData

> The **Edit MetaData** window also opens if no matching entry is found in the database but you want to enter the metadata and make it available.

5. If necessary, edit the metadata such as title, artist, album title, year, or genre.

6. Click the **Advanced Options** button if you want to add additional information.
   → The **Gracenote MusicID Information** window, which originates from Gracenote, opens. After entering the additional information you have to close this window so that the **Edit MetaData** window is displayed again.

7. Click the **Submit Data** button.
   → If you have changed the Audio CD's metadata or filled them in for the first time then the changes are sent to Gracenote and entered into the Gracenote Media Database after having been checked.
   → The **Edit MetaData** window is closed and the information is passed on to the **Save Audio Tracks to Hard Drive** window.

8. Select the tracks that you want to save on the hard drive.

9. Click the **Output** tab.
   → The **Output** tab is opened.

10. In the **File Format** drop-down menu, select the target file's audio format.

11. Choose a method for creating the file name in the **Mode for Creating File Names** drop-down menu.

12. Define other settings according to your preferences.

13. Click the **Copy** button.

➔ Conversion starts. A folder with the album name is created in the desired directory. The audio files are saved in this folder and named according to the method you chose. Meta-data that is identified with Gracenote is written into the audio file.
The **Progress** window indicates the saving progress. When the save process is complete, this window is closed automatically.

14. Click the **Close** button.

➔ The **Save Audio Tracks to Hard Drive** window is closed. You have saved audio files.

6.5.1 Save Audio Tracks to Hard Drive Window

Define the settings for audio files to be saved to the hard drive in the **Save Audio Tracks to Hard Drive** window. The window is opened by clicking the **Extras** > **Save Audio Tracks** menu.
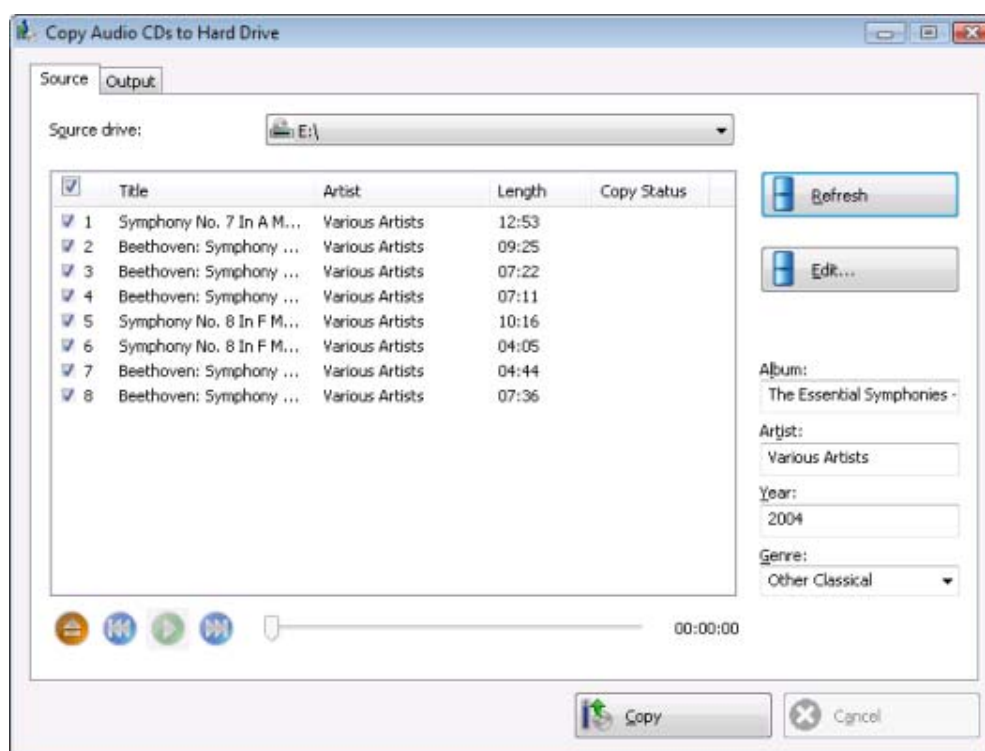
Save Audio Tracks to Hard Drive - Source

The following setting options are available:

Tab **Source**	Specifies settings for the source of the audio files.
Tab **Output**	Sets output files configuration options.
Button **Copy**	Starts the copy or save process.

6.5.1.1 Source Tab

The **Source** tab displays the audio files on the Audio CD. The functions of the control buttons correspond to the familiar control buttons on CD players.

The following setting options are available:

Drop-down menu **Source drive**	Selects the drive where the Audio CD is inserted.
Title Selection List	Displays the tracks on the Audio CD. You can select individual tracks to copy by selecting the respective check box.
Button **Refresh**	Sends a new query to the Gracenote Media Database and completes the Audio CD's metadata including artist, title name, and genre if a matching entry exists in the database.
Button **Edit**	Opens the **Edit Meta Data** window. Here, you can edit the Audio CD metadata sent by Gracenote. You can enter the metadata if no entry for your Audio CD exists in the Gracenote Media Database. This metadata is sent to Gracenote, and added to the Gracenote Media Database.
Input fields **Album/Artist/Year**	Displays or specifies metadata for the album, artist and year.
Selection list **Genre**	Displays or specifies the genre.

6.5.1.2 Output Tab

You can define the properties of the audio files to be created on the **Output** tab.
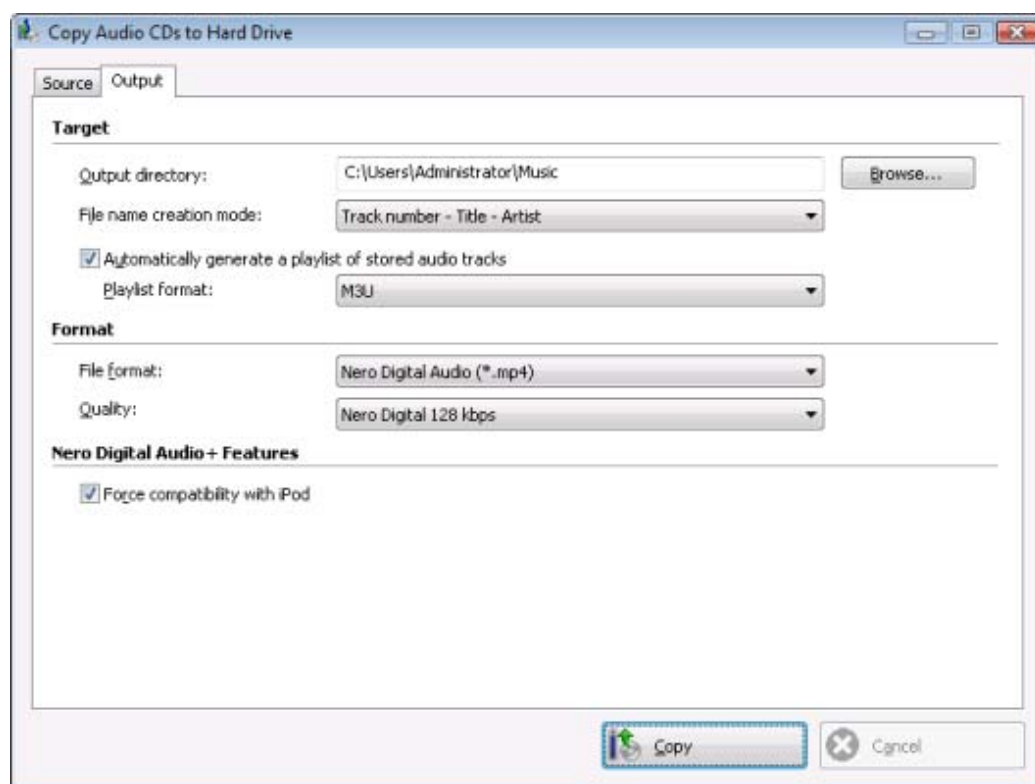
The following setting options are available:

Input window **Output directory**	Selects the storage location for the output file.
Button **Browse**	Opens a browser window where you can select a storage location.
Drop-down menu **Mode for creating file name**	Selects the method to be used for creating the name of the output file.
Check box **Automatically generate a playlist of stored audio tracks**	Creates a playlist of the saved audio files.

Drop-down menu **Playlist format**	Selects a format for the playlist.
Drop-down menu **File format**	Selects the output audio format for the selected audio file. The selected file format is available as the first entry the next time it is called up. You can choose between Nero Digital Audio, MP3 Audio or WAVE.
Drop-down menu **Quality**	Selects the bitrate for the selected audio file format. If the bit rate is small, less data is transferred. The file is then small, but quality is lower. If the bit rate is high, more data is transferred. The file size is then large, but the quality is high. A value of **128** for MP3 files is near CD quality. For the MP3 Audio file format you can also select if you want to create an MP3 file or an mp3PRO file. Only available if you selected the **Nero Digital Audio** or **MP3 Audio** file format.
Check box **Force compatibility with iPod**	Makes Nero Digital Audio+ available for an iPod. Is only available if you selected the **Nero Digital Audio +** output format.

6.6 Convert Audio File Format

With Nero Burning ROM you can convert an audio file into another format, i.e. transcode the audio file (e.g. from WAV to MP3).

The following formats are usually available (available formats may depend on the source format):

- **AC3**: You can specify the bit rate for this audio format
- **AIFF**: See Encoding Options AIFF→ 47
- **FLAC**: It is not necessary to specify any settings for this lossless audio format
- **MP3** (Lame Encoder): See Encoding Options MP3→ 47
- **MP3/mp3PRO**: See Encoding Options MP3/mp3PRO→ 48
- **Nero Digital Audio**: See Encoding Options Nero Digital Audio→ 50
- **OGG**: See Encoding Options OGG→ 52
- **WAV**: See Encoding Options WAV→ 47
- **WMA**: You can set different profiles for this audio format

6.6.1 Encode Files Window

In the **Encode Files** window, the audio files that are to be encoded are selected and the properties for the output defined. You can open the window via the **Extras** > **Encode Files** menu. The window consists of a selection area and the **Properties** area.
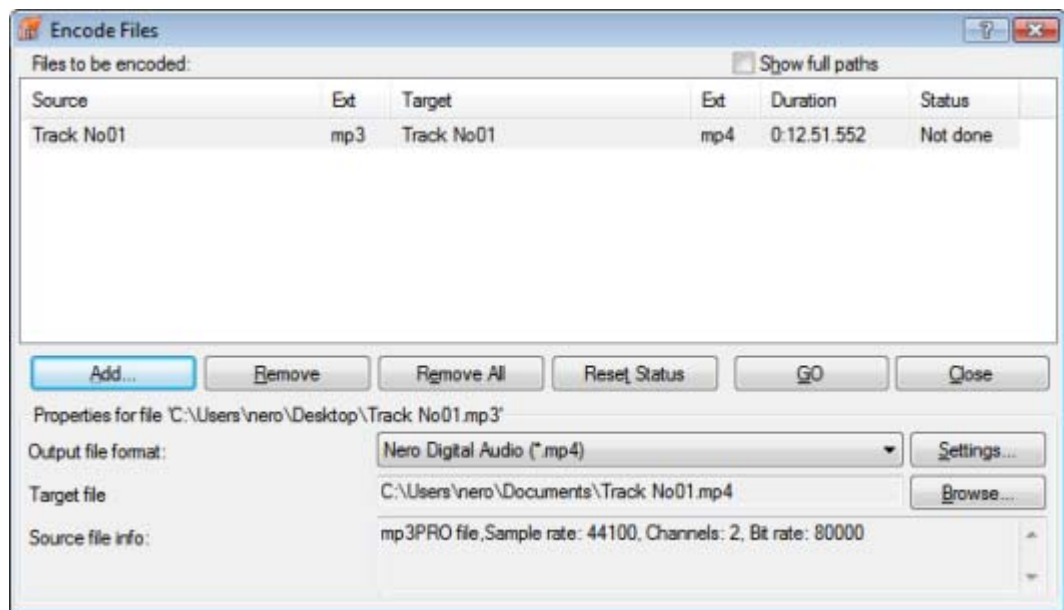
Encode Files Window

The following configuration options are available in the selection area:

List **Files to be encoded**	Displays the selected files.
Check box **Show full paths**	Displays the full source and destination paths for the files in the **Files to be encoded** list.
Button **Add**	Opens the browser window where you can select a file to add it to the list of files to be encoded.
Button **Delete**	Removes the selected file.
Button **Remove All**	Removes all files from the list of **Files to be encoded**.
Button **Reset Status**	Resets the status of the selected file to **to do**.
Button **Start**	Starts the encode process.
Button **Close**	Closes the window.

The following configuration options are available in the **Properties** area:

Output file drop-down menu	Selects the output audio format for the selected audio file.
Button **Settings**	Opens a window where you can define options such as bit rate and frequency for the output audio file.
Display panel **Target file/Target directory**	Displays the storage location of the output file or output files.
Button **Browse**	Opens a browser window where you can select a storage location.
Display panel **Source file info**	Displays information on the selected audio file.

6.6.1.1   AIF And WAV Encoding Options

Nero Burning ROM can encode audio files of an Audio CD in AIIF or WAV formats.
Set options in the **AIFF/Wave** window that you can open in the **Encode Files** window via the
Settings button. Ensure that you have selected **AIFF** or **Wave** as the **Output file format**.

The following setting options are available in the **AIFF** or **Wave** window:

Drop-down menu **Frequency**	Specifies the scan rate per second and thus determines the frequency of scanning. The higher the frequency, the more frequently scanned.
Drop-down menu **Bits**	Specifies the scan accuracy and thus determines the quality of the individual scanner. The higher the bit sign, the more accurate.
Drop-down menu **Channels**	Specifies which channels are recorded.

6.6.1.2   MP3 Lame Encoding Options

With Nero Burning ROM you can encode audio files of an Audio CD in **MP3** formats using
the Lame Codec. Set these options in the **MP3 Settings** window that you can open in the
Encode files window via the **Settings** button. Ensure that you have selected Lame MP3
Encoder as the **Output file format**.

The following encoding options are available in the **Settings** area:

Drop-down menu **Constant Bit Rate**	Selects a constant bit rate, i.e. the data flow per unit of time and the quality of the saved data are the same over the entire audio file. If the bit rate is small, less data is transferred. The file is then small, but quality is lower. If the bit rate is high, more data is transferred. The file size is then large, but the quality is high. The default value of **128** for MP3 files is near CD quality.
Drop-down menu **Variable Bit Rate**	Selects variable bit rate, i.e. the data flow per unit of time - and thus the quantity of the saved data - adapts to the dynamics of the audio file. The bit rate, for example, can be lowered at quieter points in the track. Select your desired quality level in the drop-down menu.

The following encoding options are available in the **Expert settings** area:

Drop-down menu **Encoding quality**	Specifies the encoder quality. These settings specify whether you place more value on fast encoding (**lowest/fastest**) or more value on a superior psychoacoustic encoder model for the very best results (**highest/slowest**).
Check box **Original bit**	Sets the original bit in the music file, which differentiates between the copy and the original. Check box selected: Original bit = 1, i.e. original. Check box cleared: Original bit = 0, i.e. copy.
Check box **Private bit**	Sets the private bit in the music file. It is reserved for the user and is only used for informational purposes.
Check box **Copyright bit**	Sets the copyright bit in the music file, which identifies protected content. Check box selected: Copyright bit = 1, i.e. protected. Check box cleared: Copyright bit = 0, i.e. unprotected.
Check box **Write CRC**	Also sets a checksum in the music file to ensure that transfer errors are detected.

6.6.1.3   MP3 And MP3PRO Encoding Options

With Nero Burning ROM you can encode audio files of an Audio CD in **MP3** and **MP3PRO** formats. Set these options in the **MP3PRO** window that you can open in the **Encode files** window via the **Settings** button. Ensure that you have selected MP3/MP3PRO as the **Output file format**.
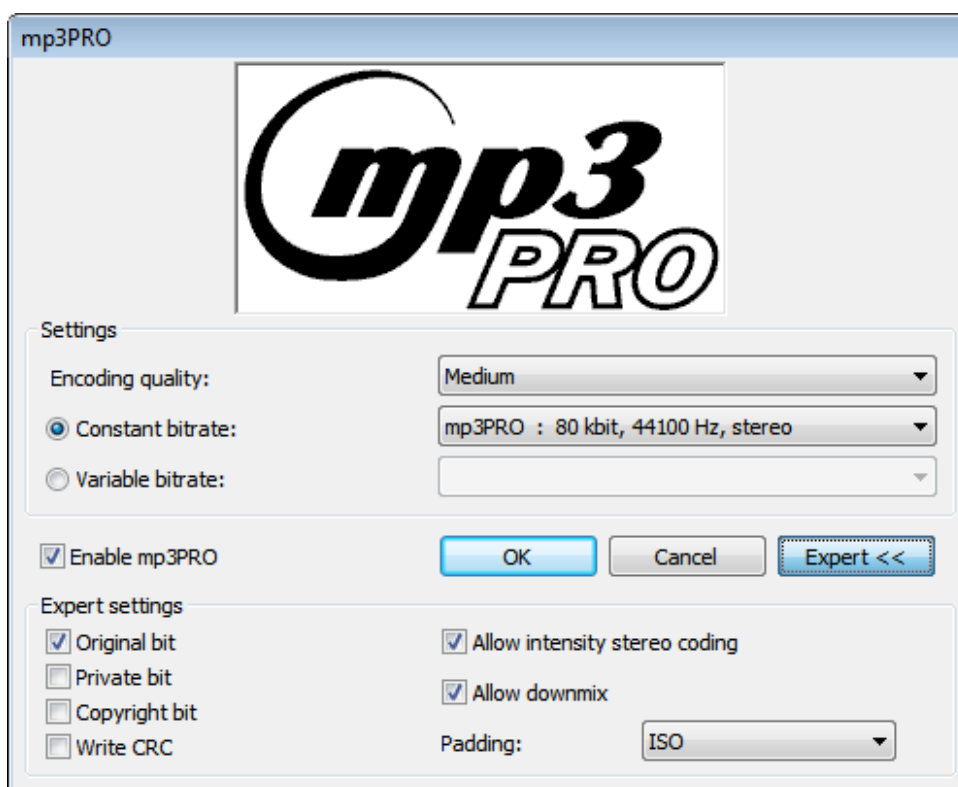
MP3PRO window

The following encoding options are available in the **Settings** area:

Drop-down menu **Encoder quality**	Specifies the encoder quality. **Fast**, **Medium** and **Highest** are available. These settings specify whether you place more value on fast encoding (**Fast**) or more value on a superior psycho-acoustic encoder model for the very best results (**Highest**).
Check box **Constant Bit Rate**	Selects a constant bit rate, i.e. the data flow per unit of time and the quality of the saved data are the same over the entire audio file. If the bit rate is small, less data is transferred. The file is then small, but quality is lower. If the bit rate is high, more data is transferred. The file size is then large, but the quality is high. The default value of **128** for MP3 files is near CD quality. In the drop-down menu, select the **Options** that affect the bit rate: scan rate per second in kBit, scan frequency per second in Hertz and the channels.
Check box **Variable Bit Rate**	Selects variable bit rate, i.e. the data flow per unit of time - and thus the quantity of the saved data - adapts to the dynamics of the audio file. The bit rate, for example, can be lowered at quieter points in the track. Select your desired quality level in the drop-down menu.

The following encoding options are available:

Check box **Enable MP3PRO**	Specifies the encoder method used. If you select the check box, an MP3PRO file is created (*.mp3 file extension). If you clear the check box, an MP3 file is created (also *.mp3 file extension).
Button **Expert**	Opens the advanced area where you can configure **Expert Features**.

The following encoding options are available in the **Expert Features** area:

Check box **Original bit**	Sets the original bit in the music file, which differentiates between the copy and the original. Check box selected: Original bit = 1, i.e. original. Check box cleared: Original bit = 0, i.e. copy.
Check box **Private bit**	Sets the private bit in the music file. It is reserved for the user and is only used for informational purposes.
Check box **Copyright bit**	Sets the copyright bit in the music file, which identifies protected content. Check box selected: Copyright bit = 1, i.e. protected. Check box cleared: Copyright bit = 0, i.e. unprotected.
Check box **Write CRC**	Also sets a checksum in the music file to ensure that transfer errors are detected.
Check box **Allow intensity stereo coding**	Uses a special codec at high frequencies that only saves the directional information and volume.
Check box **Allow downmix**	Mixes two stereo channels down to one mono signal. This option is useful when the output data is of such poor quality that a poor stereo signal is to be expected. An increase in quality is expected when downmixing to mono.
Drop-down menu **Padding**	Selects a padding type for MP3 blocks. We recommend padding type **ISO** that pads MP3 blocks according to the ISO specification.

6.6.1.4   Nero Digital Encoding Options

Nero Burning ROM can encode audio files of an Audio CD in the Nero Digital Audio format. Set options in the **Nero AAC Encoder Settings** window that you can open in the **Encode Files** window via the **Settings** button. Ensure that you have selected **Nero Digital Audio** as the **Output file** format.
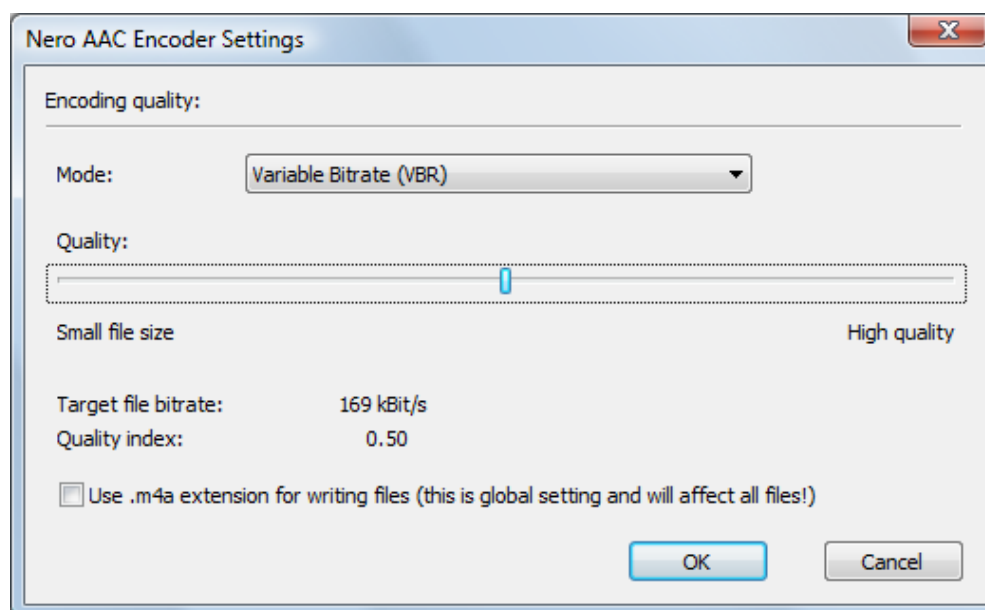
Nero AAC Encoder Settings

The following setting options are available in the **Nero AAC Encoder Settings** window:

Drop-down menu entry **Variable Bitrate**	Specifies a variable bit rate, i.e. the data flow per unit of time and thus the quantity of the saved data adapts to the dynamics of the audio file. The bit rate, for example, can be lowered at quieter points in the track. You can set the variable bit rate between **0** and **100**. **0** means the lowest, **100** the highest quality.
Drop-down menu entry **Average Bitrate**	Specifies an average bit rate, i.e. the data flow per unit of time and thus the quantity of the saved data adapts to the dynamics of the audio file but the average bit rate tends to the defined value. In principle is it a variable bit rate with a limited bit band width and thus combining the advantages of the variable and the constant bitrate.
Drop-down menu entry **Constant Bitrate**	Specifies a constant bit rate, i.e. the data flow per unit of time and thus the quantity of the saved data is the same over the entire audio file.
Slider **Quality**	Specifies the bit rate, i.e. the data flow per unit of time and thus the quantity of the saved data. If the bit rate is small, less data is transferred. The file is then small, but quality is lower. If the bit rate is high, more data is transferred. The file size is then large, but the quality is high. The default value of **128** is near CD quality.

Check box **Use .m4a extension for writing files**	Encodes the audio files in the M4A audio file format; which was defined by Apple.

6.6.1.5 OGG Vorbis Encoding Options

Nero Burning ROM can encode audio files of an Audio CD in the OGG Vorbis format.
Set options in the **OGG Vorbis Settings** window that you can open in the **Encode Files** window via the **Settings** button. Ensure that you have selected **OGG Vorbis** as the **Output file format**.

The following setting options are available in the **OGG Vorbis Settings** window:

Check box **Constant Bit Rate**	Specifies a constant bit rate, i.e. the data flow per unit of time and thus the quantity of the saved data is the same over the entire audio file.
	If the bit rate is small, less data is transferred. The file is then small, but quality is lower. If the bit rate is high, more data is transferred. The file size is then large, but the quality is high. The default value of **128** is near CD quality.
Check box **Variable Bit Rate**	Specifies a variable bit rate, i.e. the data flow per unit of time and thus the quantity of the saved data adapts to the dynamics of the audio file. The bit rate, for example, can be lowered at quieter points in the track.
	You can set the variable bit rate between **0** and **100**. **0** means the lowest, **100** the highest quality.

7   Video And Slide Show

7.1   Compiling Video CDs/Super-Video CDs

Using Nero Burning ROM you can compile Video CDs (MPEG-1 format) and/or Super Video CDs (MPEG-2 format) from your video and/or picture files, which can be played on almost all VCD or SVCD and DVD players as videos or slide shows. Source files are automatically converted to the correct format during the burn process. The procedure for both compilation methods is identical.

> When creating a slide show as a VCD/SVCD, the picture files involved are stored in a DAT file. This kind of file can no longer be modified or viewed using an image processing program. If you would like to save the original formats on your CD as well, select the **Store source pictures in** check box.

To create a (Super) Video CD, proceed as follows:

1. Select the **CD** entry from the drop-down menu in the **New Compilation** window. (In the case that the **New Compilation** is not opened, it can be opened by clicking the **New** button of the main screen.)

2. Choose the **Video CD** or **Super Video CD** compilation type from the selection list.

→ The tabs with the configuration options that are valid for this compilation type are displayed.

3. Click the **New** button.

→ The **New Compilation** window is closed and the selection screen is opened. It includes a compilation area for video and image files and an area for data.

> Do not change the folder structure in the **Data** area in any way and do not drag any files into the preset folder. The folder structure is required as preset in order to create a functional VCD/SVCD.

4. Select the video or image file that you want to burn from the browser area on the right side.

5. Drag the desired file into the compilation area on the left side.

→ The file is added to the compilation and displayed in the compilation screen. The capacity bar shows how much disc space is required.

If an MPEG file does not have the appropriate features of a VCD or SVCD, Nero Burning ROM recognizes the wrong format and you have three options:

Turn Off Standard Compliance and Continue: Burns the file without changes to the CD. We recommend that you only select this option if you are experienced in creating VCD/SVCDs.

Re-Encode the Video File: Decodes the existing file, converts it to the correct resolution and frame rate, and encodes it again. Re-encoding is done before burning. This process requires both time and temporary memory space.

Cancel: Interrupts the addition of the video file, i.e. it is not added to the compilation.

6. Repeat the previous step for all files that you want to add.
7. Click the **Burn** button.
    → The **Burn Compilation** window is opened.
8. Set the desired options in the **Video CD** and **Menu** tabs.
    → You have successfully compiled a (Super) Video CD and can now burn this compilation.

See also:

7.1.1 Defining Options

7.1.1.1   Video CD Settings

The **Video CD** tab provides configuration options for Video CD (VCD) and Super-Video CD (SVCD).

The following configuration options are available in the **Generating** area:

Check box **Create standard compliant CD**	Generates a VCD/SVCD which can be played in a DVD player.
Check box **Store source pictures in**	Generates an extra directory in the VCD/SVCD folder structure where the source formats of the pictures are stored automatically. You can assign a separate name for the extra directory.
Option buttons **Encoding resolution**	Defines the color format to which the video files will be converted; the option buttons PAL and NTSC are available.

The following configuration options are available in the **Advanced** disc format **Video CD** area:

Check box **Use CD-I application**	Creates a VCD that can be played in a CD-i player. The respective program code is in the Configuration text box.

The following configuration options are available in **Advanced** - disc format **Super-Video CD** area:

Button **Compatibility**	Opens the **Super Video CD Compatibility Options** window where you can set non-standard parameters for the SVCD. We recommend that you only use this option if you are familiar with standard formats and the creation of SVCDs.
Option button **Try to fit to disc size**	Automatically adjusts the bit rate to the disc size entered.
Option button **User-defined**	Selects a bit rate.

When creating a slide show as a VCD/SVCD, the picture files involved are stored in a DAT file. This kind of file can no longer be modified or viewed using an image processing program. If you would like to save the original formats on your CD as well, select the **Store source pictures in** check box.

7.1.1.2   Video CD Menu Settings

The **Menu** tab provides various configuration options for Video CD (VCD) and Super Video CD (SVCD):

Check box **Enable Menu**	Enables the menu for the VCD/SVCD and the grayed-out **Menu** and **Text** areas.

The following configuration options are available in the **Menu** area:

Drop-down menu **Layout**	Selects the menu layout.
Check box **Header / Footer**	Adds a default header or footer. Note that you must enter the content of the header and footer in the respective text boxes in the **Text** area.
Drop-down menu **Background mode**	Defines how the wallpaper is inserted, for example whether it should be maximized or minimized.
Drop-down menu **Background image**	Selects the wallpaper. You can also select none or load your own image. You can also define the color of the wallpaper.

The following configuration options are available in the **Text** area:

Input options **Header / Footer**	Specifies the header/footer text, font options and shadow.
Input options **Elements / References**	Specifies text, font options and shadow for elements (lines and miniature view label) and references for elements.
Check box **Display first page**	Opens the **Menu Preview** window which displays a preview of the menu.
Button **Set as Default**	Saves the current menu settings as default values.

7.2 Compiling DVD-Videos or miniDVDs

Using Nero Burning ROM you can burn DVDs made up of DVD-Video files from your hard drive. You can show your burned DVDs on almost all DVD players.
The miniDVD is burned to CD. It uses the specification of a DVD and therefore has the same technical options and qualities as a DVD. However, playback is not guaranteed on all DVD players.

You can use Nero Burning ROM to burn a DVD Video and miniDVD if the DVD video title, i.e. a complete DVD folder structure, is already available.

> In Nero Burning ROM it is not possible to create a DVD-Video from video files. You can convert video files to DVD-Videos in Nero Vision for example. More information is available in the separate Nero Vision manual.

To compile a DVD-Video or miniDVD, proceed as follows:

1. Select the **DVD** or **CD** entry from the drop-down menu in the **New Compilation** window. (In case that the **New Compilation** window is not opened, it can be opened by clicking the **New** button on the main screen.)

2. Choose the **DVD Video** or **miniDVD** compilation type from the selection list.
   → The tabs with the configuration options that are valid for this compilation type are displayed.

3. Click the **New** button.
   → The **New Compilation** window is closed and the selection screen is opened. It includes a compilation area for video and image files and an area for data.

4. Select the video file that you want to burn from the browser area on the right side.

5. Drag the existing DVD folder structure of the video title (Video TS) into the video compilation area on the left side.
   → The file is added to the compilation and displayed in the compilation screen. The capacity bar indicates how much space is required on the disc.

6. Click the **Burn** button.
→ The **Burn Compilation** window is opened.

7. Set the options you require in the tabs.
→ You have successfully compiled a DVD-Video or miniDVD and can now burn this compilation.

See also:
📄 Selection Screen→ 16

8   Bootable Disc

Using Nero Burning ROM you can create a bootable disc with which the computer can be started without having to access the hard drive. For this reason a bootable disc is often used as an "emergency disc" to start the computer if it is not possible to access the hard drive. Bootable discs are created in accordance with the "El Torito" standard, an extension to the ISO-9660 standard, which defines the structure of data discs. The disc contains a boot image and an ISO part. The boot image contains all files that are required to load the operating system and to start the computer. The ISO part can contain any number of data files that you can back up using this method.

8.1   Requirements For Booting From a Disc

To ensure that a computer can boot from disc, the start sequence must be set in the BIOS of the computer in such a way that the drive is addressed first as the boot drive (start sequence CD-ROM, C, A for instance). In the case of an SCSI CD-ROM drive, this drive must be connected to an SCSI adapter with a separate BIOS in which settings can be modified accordingly. (This will only work if there are no IDE hard drives present, as these come before the SCSI adapter in the boot sequence.)

When booting from a disc, you can only start an operating system that does not write to the medium, such as "MS DOS" or "Linux". During booting Microsoft Windows 2000 and Microsoft Windows XP write to the medium from which they are being booted. This is not possible with a disc and so the process is canceled and the PC cannot be started.

8.2   Bootable Disc Template

For Nero Burning ROM, the template for creating a bootable disc can be either a logical drive (e.g. the C: drive) or a drive image file which contains the contents of a drive as a file sector for sector. If the template for the bootable disc is a logical drive, the bootable disc will emulate this when the system is booting. There are three emulation types:

- **Floppy emulation**: This requires a bootable floppy disc for creating the bootable disc. At startup the bootable disc emulates a floppy disk in drive A:. In the process, the drive letters increment, so that Drive A: corresponds to the bootable disc. The volume of the start data is limited by the capacity of the floppy disk (e.g 1 MB).

- **Hard drive emulation**: A bootable hard drive is required to create the bootable disc. At startup the disc emulates Drive C. All drive letters from Drive C increment by one. The volume of the start data is limited by the capacity of the CD (e.g. 700 MB) or DVD (8.5 GB). If, for instance, you have a 200 GB hard drive with only one (200 GB) partition, you cannot create a bootable disc from it without repartitioning your hard drive accordingly beforehand.

- **No emulation**: In this process the drive names are not changed. This type is used for bootable installation CDs. This setting is intended for users who do not require a floppy or hard drive emulation and who want to install their own device driver.

8.3   Creating And Burning a Bootable Disc

To create a bootable disc, proceed as follows:

1. Click the **New** button in the main Nero Burning ROM screen.

→   The **New Compilation** window is opened.

2. If you want to create a bootable CD, select the entry **CD** from the combo box and the entry **CD-ROM (Boot)** from the selection list.
If you want to create a bootable DVD, select the entry **DVD** from the combo box and the entry **DVD-ROM (Boot)** from the selection list.

→   The tabs for the bootable disc are displayed; the **Boot** tab is in front.

3. If the template data for the bootable disc should originate from a logical drive:

   1. Select the **Bootable logical drive** option button in the **Source of boot image** data area.
   2. Select the entry you want from the drop-down menu.

> If the logical drive you want does not appear in the drop-down menu, the reason for this is that the drive is bigger than the space available on the disc. Please note that for operating systems such as Microsoft® Windows® 2000 you need to have administrator rights in order to be able to access drives directly, which you will need to do if you are to create bootable discs.

4. If the template data for the bootable disc should originate from an image file:

   1. Select the **Image file** option button in the **Source of boot image data** area.
   2. Click the **Browse** button and select the desired image file.
   3. Select the language that should appear while the system is booting from the **Boot locale** drop-down menu.
   4. Select the **Enable expert features** check box and select the emulation type for the image file from the **Emulation type** drop-down menu.

5. Select any other options required on the tabs.

6. Click the **New** button.

→   The selection screen is displayed.

7. Select the files/folders that should be written to the ISO part of the bootable disc and drag them into the compilation area.

→   The files/folders are displayed in the compilation area and the capacity bar indicates how much storage space is required on the disc. You have now created the bootable disc and can start the burn process.

9   Loading Image File

You can use Nero Burning ROM to burn a disc from a disk image that you have previously saved on the hard drive.

To load a saved image file, proceed as follows:

1. Select a recorder from the drop-down menu.

2. Click the ⬇ button in the main screen.

→ The **Open** window is opened.

3. Select the desired image file and click the **Open** button.

→ The **Burn Compilation** window is opened.

4. Set the desired options.

→ You have successfully loaded the image file and can now burn it.

10   LightScribe

Using Nero Burning ROM and a LightScribe recorder you can create or load labels that you can burn onto the label side of CDs/DVDs in the LightScribe recorder. The function is available as a separate **Print LightScribe Label** option in the start screen or can be integrated as an intermediate step into the creation and burn process of a project.

> This function is only available in recorders that support LightScribe technology.

10.1 CD Label Editor Window

In the **CD Label Editor** window, you can create or load a label. The window is opened when you click the **Create** button in the **LightScribe** area on the **Misc** tab for the current compilation.

> The interface in the **CD Label Editor** window works on the same principle as Nero CoverDesigner. Basically, it is irrelevant whether you print the label on paper or directly onto an appropriate disc. Please see the separate Nero CoverDesigner user manual for full instructions on how to make professional looking covers and labels.
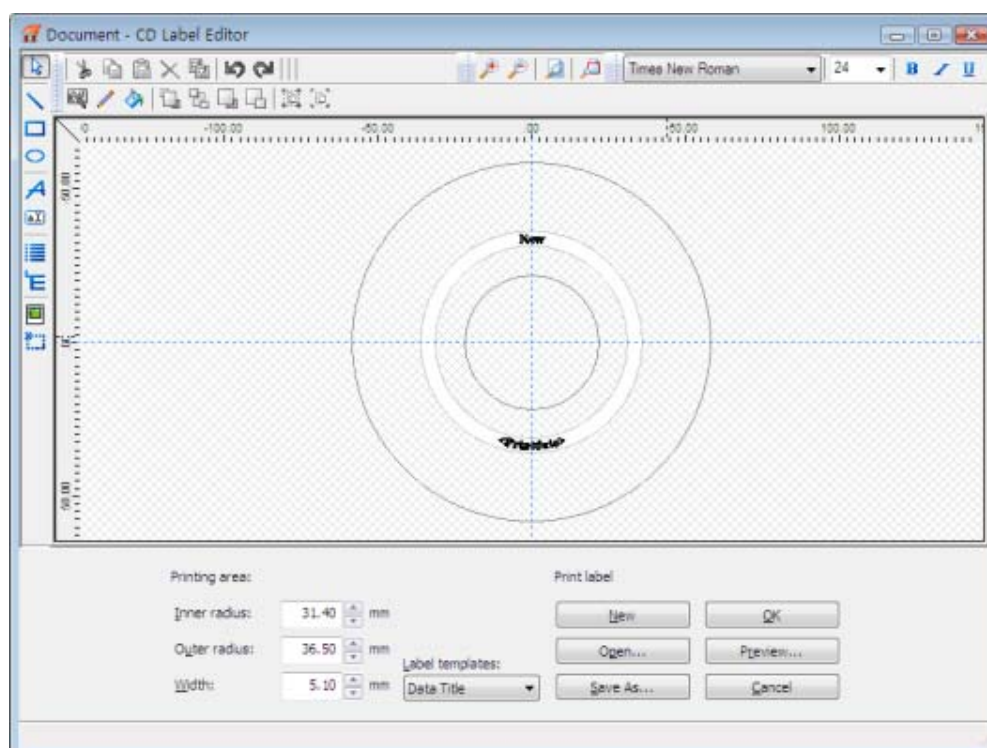
Document - CD Label Editor Window

The following configuration options are available:

Inner radius	Defines the distance between the label and the inner edge.
Outer Radius	Defines the distance between the label and the outer edge.
Width	Defines the width of the print area.
Label templates	Contains a selection of different templates for designing the label. You can continue to edit and customize a selected template.
New	Generates a new label document.
Open	Opens an existing label which was created using Nero CoverDesigner.
Save As	Saves the label you have created.
OK	Adds the label you created to the compilation and closes the window.
Preview	Opens the **Print Preview** window that shows how the label should appear on the LightScribe disc.
Cancel	Cancels the procedure and closes the window.

10.2 Printing LightScribe Label

The process for printing the label is integrated into the burn process. First, the compilation is burned. You then flip the disc over, and the label is being burned.

To print a label, proceed as follows:

1. Create a compilation and select the files to burn.

2. Select a LightScribe recorder from the drop-down menu in the toolbar.

3. If you want to set the print options for LightScribe:

    1. Click the **File** > **Options** menu.
        → The **Options** window is opened.
    2. Click the **LightScribe** tab.
        → The configuration options for LightScribe are displayed.
    3. Select the desired printing quality from the **Print contrast** area. The better the quality, the longer the recorder takes to print the label.
    4. Set the other options you require.
    5. Click the **OK** button.
        → The changes are saved and the window is closed.

4. Click the **Burn** button.
    → The **Burn Compilation** window is opened.

5. Click the **Misc** tab.

6. Select the **Print Label** check box in the **LightScribe** area.

7. If you want to use an existing label:

    1. Select the entry **Use Nero CoverDesigner files** from the drop-down menu in the **Light-Scribe** area.

       → The **Open** browser window is opened.

    2. Select a Nero CoverDesigner file and click the **Open** button.

       → The window is closed and the selected file accepted for this compilation.

8. If you want to create a label for this compilation:

    1. Select the entry **Use label from compilation** from the **LightScribe** area.

       → The **CD Label Editor** window is opened.

    2. Create a label.

    3. If you want to change the label you have created, click the **Edit** button.

> The interface in the **CD Label Editor** window and the procedure for creating labels work on the same principle as Nero CoverDesigner. Please see the Nero CoverDesigner user manual for full instructions on how to make professional looking covers and labels.

9. Set the options you require in the tabs.

10. Insert a blank LightScribe CD with the data side facing down and click the **Burn** button.

   → The burn process starts and the compilation is burned. A progress bar indicates the progress being made by the burn process. When the burn process is complete the disc is ejected. A window is opened with the message "**Please insert a LightScribe disc into the drive with the label side facing down**".

11. Insert the blank LightScribe disc into the recorder with the label side facing down and click **OK**.

   → The **LightScribe Print Properties** window is opened and the print process starts.In the **LightScribe Print Properties** window a progress bar indicates the progress being made. When the print process has finished, a window is opened with the message "**Burn process completed successfully**".

12. Click the **OK** button.

   → The disc is ejected. You have printed a LightScribe label.

See also:

11   Labelflash

If you have a <u>Labelflash</u> recorder, you can print a <u>label</u> on the label and/or data side of the Labelflash DVD. A Labelflash DVD has a special layer between the top and bottom layers; this layer can be heated by the laser in the recorder so that images and text can be printed on the DVD.

> The interface in the **Burn Label** screen works on the same principle as Nero CoverDesigner. Basically, it is irrelevant whether you print the label on paper or directly onto an appropriate disc.
>
> Please see the separate Nero CoverDesigner user manual for full instructions on how to make professional looking covers and labels.

> This feature is only available in recorders that support Labelflash technology.

11.1   Burn Label Screen

In the **Burn Label** window you can create or load a label and write it on a Labelflash DVD. Information on the selected printing quality and rotation speed is displayed on the right-hand side of the screen. Under **Disc type** you can see whether the blank disc has been inserted with the label or data side. Either the Labelflash or the DiscT@2 logo is displayed in the **Burn Label** window depending on which side is inserted.
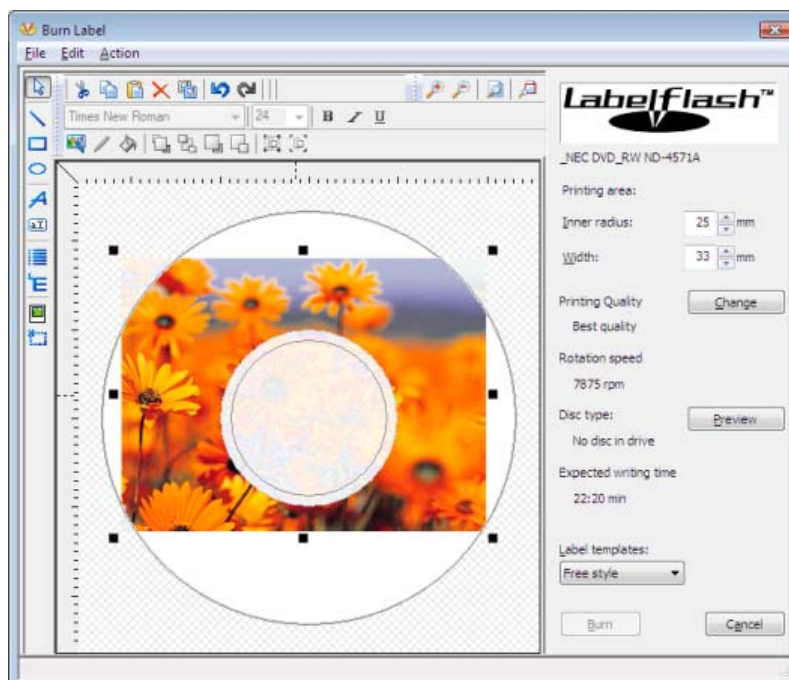
Burn Label Window

The following configuration options are available in the **Burn Label** window:

Input field **Inner Radius**	Defines the distance between the label and the inner edge.
Input field **Width**	Defines the width of the print area.
Button **Edit**	Opens the **Labelflash Print Properties** window. This is where you can change the printing quality and the contrast level and display the changes made directly in the print preview.
Button **Preview**	Opens the **Print Preview** window that shows how the label should appear on the Labelflash disc.
Selection list **Label templates**	Contains a selection of different templates for designing the label. You can continue to edit and customize a selected template.
Button **Writing**	Starts the burn process.
Button **Cancel**	Cancels the procedure and closes the window.

If you are creating a DiscT@2, Nero Burning ROM displays only the available print area for creating the label by default, i.e. the area on the data side of your DVD that is not already taken up by data. You cannot increase the radius of the print area.

11.2 Printing Labelflash Labels And DiskT@2

Basically, it is irrelevant whether you print on the label or the data side when creating labels. The label is actually printed outside the normal burn process.

You can print on the label side of the DVD at any time.

We recommend that you print on the data side first when you have burned the compilation. It is not possible to burn data on a printed data side. When you insert a DVD on which data has already been burned, Nero Burning ROM automatically identifies the space that is still available on the data side and on which you can print.

To print a Labelflash label on the label side or a DiskT@2 on the data side of your DVD, proceed as follows:

1. If you want to print a Labelflash label on the label side, insert a blank Labelflash disc into the recorder with the label side facing down.

→ The **Burn Label** window is opened with the Labelflash logo.

2. If you want to print a DiskT@2 on the data side, insert a blank Labelflash disc with the data side facing down in the recorder.

→ The **Burn Label** window is opened with the DiskT@2 logo.

3. Create a label according to your requirements or open a label that you have already created with Nero CoverDesigner.

> The interface in the **Burn Label** window and creation of a label work on the same principle as Nero CoverDesigner. See the separate Nero CoverDesigner manual for full instructions on how to create professional looking covers and labels.

4. If you want to change the area in which the label is printed, change the print area accordingly using the input fields **Inner Radius** and **Width**.

5. If you want to view or change the print properties:

  1. Click the **Change** button.

  → The **Labelflash Print Properties** window is opened.

  2. If you want to change the printing quality, select a quality level from the **Print quality profile** drop-down menu.

  3. If you select the **User defined** entry from the **Print quality profile** drop-down menu, you can change the contrast level and the rotation speed.

  4. Click the **OK** button.
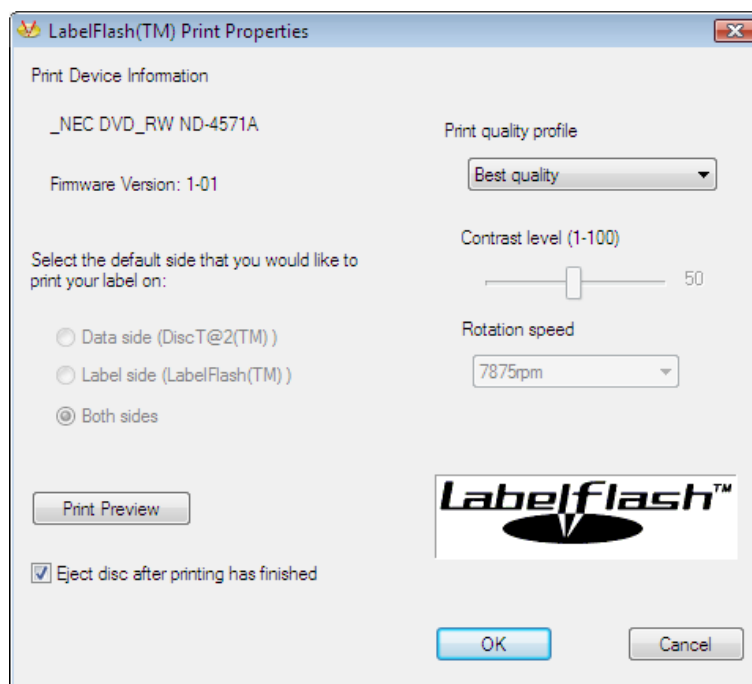
Labelflash Print Properties

→ The **Labelflash Print Properties** window is closed and the changes are accepted.

6. Click the **Burn** button.

→ The labeling procedure starts and the **Labelflash - printing** or **DiscT@2 - printing** window is opened. The window shows the estimated printing time and the print progress. When printing is complete, a message window is opened informing about the successful print process.

7. Click the **OK** button.

8. The message window is closed and the disc ejected.

→ You have successfully printed a label.

12   Burn Compilation

12.1 Choose Recorder Window

In the **Choose Recorder** window you can select a recorder for burning. You can open the window via the ⊟ icon. The window shows useful information about the recorder (e.g. supported disc types). In the advanced area you can set expert options. The available options depend on the chosen recorder.
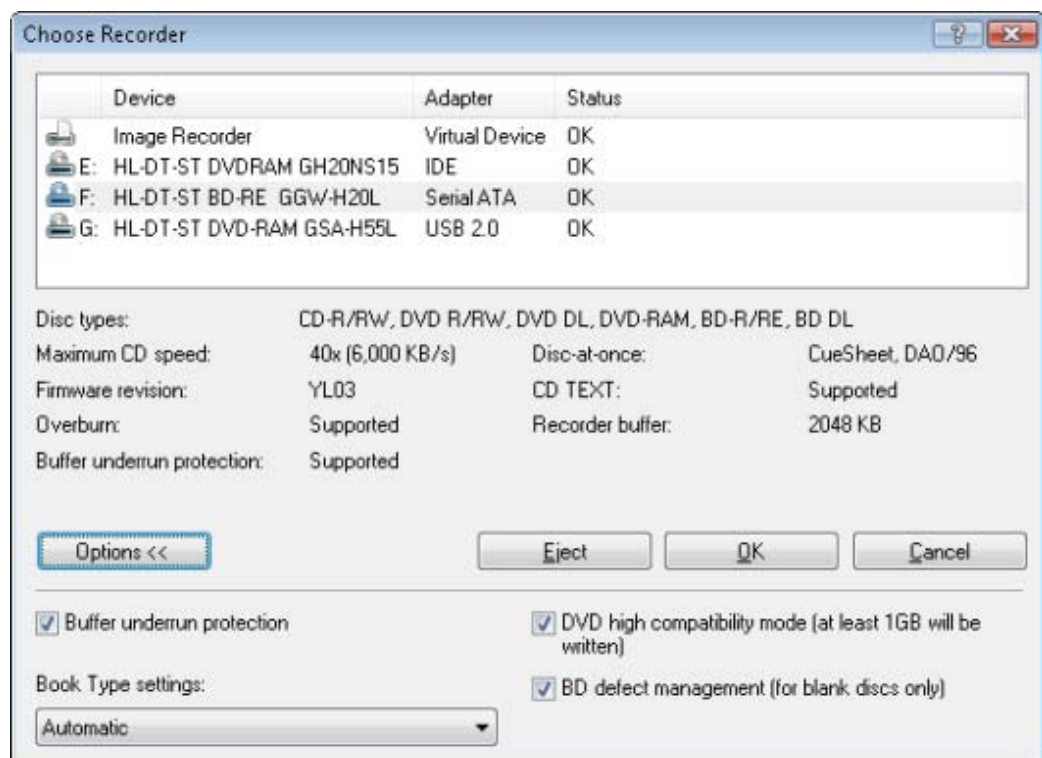
Choose Recorder

The following setting options are available in the advanced area:

Check box	Provides buffer underrun protection.
Buffer underrun protection	This feature is particularly useful for burning CDs.
Check box	Burns the DVD up to a radius of at least 30 mm (approx. 1 GB), even when the compilation contains less data. In doing so the DVD is forced to meet the DVD-Video specification which reduces possibility of read errors.
DVD high compatibility mode	This feature is particularly useful for burning DVD-Videos.

Check box **BD defect management**	Burns the Blu-ray Disc in defect management mode. In doing so the burner allocates part of the disc so that it is able to burn the data that has been damaged in a write error again. BD defect management reduces the write speed but increases data security. This feature is particularly useful for burning data Blu-ray Discs or for burning backups to Blu-ray Discs.
Drop-down menu **Book Type Settings**	Defines the book type setting for a DVD. This feature is particularly useful for burning to blank DVD.

Four book type settings are available:

Automatic: Automatically selects the most suitable book type for this DVD.

DVD-ROM: Sets the book type to DVD-ROM. Select this setting if the DVD is to be played on several DVD players or your DVD player has difficulties with self-burned DVDs or of the DVD, DVD+ or DVD-RW specification.

Physical disc type: Selects the book type which is specified on the DVD.

Current recorder setting: Leaves the book type setting to the recorder.

12.2 Burn Settings

The **Burn** tab on the **Burn Compilation** window provides options for the burn process.

Burn Tab

The following check boxes are available in the **Action** area:

Check box **Determine maximum speed**	Determines how quickly the compiled files can be accessed.
Check box **Simulation**	Simulates burning. In the process the simulation performs all steps that are also carried out during burning with the exception of setting the laser beam. A test determines whether there is a constant flow of data.
Check box **Writing**	Enables the **Burn** button.
Check box **Finalizing a Disc**	Closes the disc so that you cannot write to this disc anymore. Depending on the disc format, finalizing may be necessary. Nero Burning ROM automatically checks the box for the relevant disc formats.

The following configuration options are available in the **Writing** area:

Drop-down menu **Write speed**	Selects the write speed at which the disc is burned.
Drop-down menu **Write method**	Selects the method used to burn the disc. **Disc-at-once** and **Track-at-once** are available. **Disc-at-once**: Burns the entire disc in one go without having to switch off the laser between individual audio files. **Track-at-once**: Burns each audio file (track) separately onto the disc, i.e. the laser is switched off and switched on again after each audio file.
Input field **Number of copies**	Defines the number of discs that are to be burned. The default is set to one disc.
Check box **Buffer underrun protection**	Provides buffer underrun protection. This check box is only available if the selected burner supports a method which offers buffer underrun protection.
Check box **Using several recorders**	When you click the **Burn** button, a window is opened in which you can select the desired recorders. The burn process is then carried out simultaneously on the selected recorders. This check box is not available for the disc type **Audiobook CD**.
Check box **Do a virus check before burning**	Checks the files in the compilation for possible viruses before burning. This check box is not available for the disc types **Audio CD**, **VCD**, **SVCD**, and **Audiobook CD**.

The speed test and simulation are not required for recorders that have a function for protecting against buffer underruns.

Audio, Video and Super Video CDs should always be burned using the disc-at-once method. This entry is selected by default for these disc formats.

12.3 Starting The Burn Process - Burning Discs With The Drive

Many CD players cannot read rewritable CDs (CD-RW). You should therefore use normal CD-ROMs for burning Audio CDs.

To start the burn process, proceed as follows:

1. Click the **Burn** button in the main screen.
   → The **Burn Compilation** window is opened; the **Burn** tab is in front.
2. Check or select the options on the individual tabs.
3. Insert an appropriate blank disc and click the **Burn** button.
   → The burn process is started. On the screen a progress bar indicates the progress being made by the burn process.
4. If you want to shut down the PC when done (as long as this is technically feasible), select the **Shut Down PC after Completion of Burn** check box.
5. If you want to check the written data after burning, select the **Verify written data** check box.
   → When the burn process has finished, a message window is opened.
6. If you want to display the extended area with the event log, click the **Details** button.
7. If you want to start another burn process with the same compilation, click the **Burn Again** button.
8. Click the **OK** button.
   → The burning process is complete. You can now remove the burned disc from the recorder.

12.4 Burning With Image Recorder – Creating an Image File

To create an image file, proceed as follows:

1. Click the **New** button.
2. Create a new compilation of your choice.

> Using Nero Burning ROM you can create image files for disc types that the installed recorder cannot burn. You can enable this function via the **File** > **Options** > **Expert Features** menu, **Enable all supported recorder formats for image recorder** check box. The drop-down menu in the **Compilation** window then makes available all supported disc types.

3. Select the files that you want to burn.

4. If you have installed multiple recorders, select Nero Image Recorder from the drop-down menu.

5. Click the **Burn** button.
→ The **Burn Compilation** window is opened; the **Burn** tab is in front.

6. Click the **Burn** button.
→ The **Save Image File** window is opened.

7. Specify a file name and a storage location for the image file and click the **Save** button.
→ The image file is created and saved in the selected storage location. On the screen, a progress bar indicates the progress made while the file is being created. Once the creation process is over, a message window is opened.

8. Click the **OK** button.
→ The message window is closed and you have successfully created the image file.

See also:

13 Copying CDs/DVDs

13.1 Methods of Copying

Nero Burning ROM can be used for copying discs. There are two methods for this:

- On-the-fly
- Copy Over Image

Each method has advantages and disadvantages which will depend on your requirements.

13.1.1 On-the-fly Copying

When using the on-the-fly method, insert the original disc into a drive and a recordable disc into the drive. The original disc in the drive is copied immediately without any time delay to the blank disc in the recorder. The on-the-fly method allows you to copy discs very quickly, and does not require any additional space on the disc.
In order to be able to use the on-the-fly method, you will need at least two drives: one for reading the disc and a disc burner for writing. The following requirements apply to the read drive and disc burner:

- The disc burner must feature buffer underrun protection, or the drive must be capable of delivering the data sufficiently quickly. The read speed should be at least twice as fast as the write speed.
- The read drive must be capable of delivering information on the number and type of sessions, otherwise Nero Burning ROM may not be able to produce an exact copy.

If you want to copy Audio CDs, we recommend the copy image method because the quality of the read audio files can suffer depending on the drive.

13.1.2 Copy Over Image

With the copy over image method, an image of the original disc is saved to a file first. The image file is then burned to a blank disc. Copying using copy over image takes longer, but it often produces better results.
You must have sufficient storage space to use the copy over image method.

The copy over image method is particularly suitable in the following situations:

- Only one drive is available.
- You would like to make several copies of the same disc.
- You think it likely that read errors may have occurred on the source CD (for example because it is scratched).
- You attach importance to the best possible reproduction (particularly in relation to index positions and the quality of Audio CDs).

13.2 Copying Disc

To copy a disc, proceed as follows:

> If you are not in possession of the copyright for the relevant CD/DVD and do not have authorization from the owner of the copyright, unauthorized copying of CDs violates national and international legislation.

> Copy-protected Audio CDs cannot be copied using Nero Burning ROM.

> Some CDs/DVDs are copy-protected and cannot be copied. If you are not sure whether your CD/DVD can be copied, activate simulation before commencing the actual physical burn process.

1. Click the **Copy** button in the main screen.
   → The **New Compilation** window is opened.

2. Select the disc type you want from the drop-down menu.

3. Carry out the desired settings in the tabs.

4. If you want to copy discs using the **Image Copy** method:
   1. Clear the **On the fly** check box on the **Copy Options** tab.
   2. Insert the disc that you want to copy into the recorder.

5. If you want to copy discs using the **on-the-fly** method:
   1. Select the **On-the-fly** check box on the **Copy Options** tab.
   2. Select the drive that contains the disc to be copied from the **Drive** drop-down menu.
   3. Insert the disc that you want to copy into the selected drive.
   4. Insert a blank disc.

6. Click the **Copy** button.
   → If you are copying via the drive, the copy process starts. If you are using Nero Image Recorder, the **Save Image File** message window is opened.

7. Enter a name for your image file in the **File Name** text box.

8. Select the relevant storage location in the **Save to** directory tree and click the **Save** button.
   → The copy and/or save process starts. You can follow the process status in the status bar. If you are using a single drive for copying, you will be prompted to remove the source disc and to insert a suitable blank disc after the image file has been written.

9. Click the **Next** button.
   → You have successfully copied a disc.

13.3 Copy Settings

In the **New Compilation** window, define the options for copying at the beginning of the copy procedure. You can use the **Copy** button in the main screen to open the window. The **New Compilation** window consists of a drop-down menu, various buttons, and tabs.
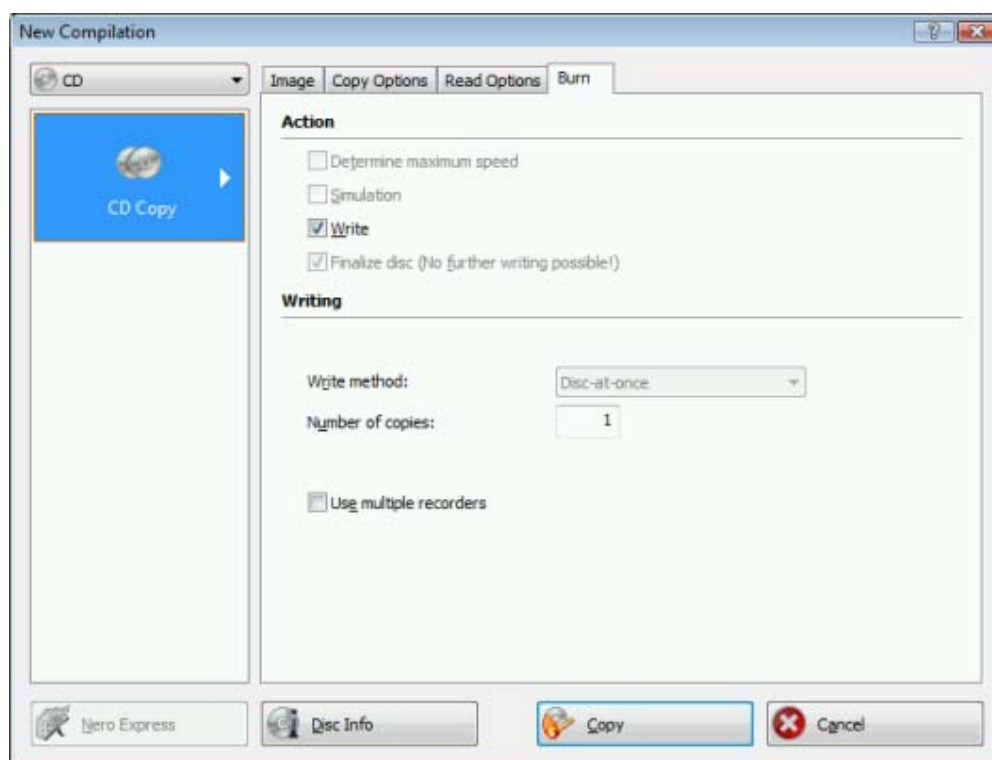
Copy settings

Only those disc types supported by the recorder are displayed in the drop-down menu. If the recorder can only burn CDs, the drop-down menu is grayed out.

> Using Nero Burning ROM you can create image files for disc types that the installed recorder cannot burn. You can enable this function via the **File** > **Options** > **Expert Features** menu, **Enable all supported recorder formats for image recorder** check box. The drop-down menu in the **Compilation** window then makes available all supported disc types.

The following configuration options are available:

Button	Displays information on the disc inserted, such as contents (if any)
Disc Info	or available capacity for instance.
Button	Starts the copy process.
Copy	

Button	Closes the **New Compilation** window.
Cancel	

The following tabs are available:

Image	Gives the path to the temporary image file and provides information on the speed of the hard drive.
Copy Options	Contains options for configuring copying.
Read Options	Contains options for configuring reading of the original disc.
Writing	Contains options for configuring the burn process.

13.3.1 Image Settings

The **Image** tab provides the two areas **Image file** and **Hard drive speed info**. The **Image file** area is only enabled if the **On-the-fly** check box is cleared on the **Copy Options** tab.

The **Image** tab provides the following configuration options in the **Image File** area.

Input field	Displays the path of the temporary image file.
Path	
Check box	Deletes the temporary image file when the copy process is finished.
Delete image file after disc copy	
Button	Opens the **Save As** window where you can specify a file name and a directory where the temporary image file should be stored.
Browse	

The following configuration options are available in the **Image** tab in the **Info on Hard Drive Speed** area:

Drive List	Lists the available drives and hard drives.
Button	Tests the speeds of the available drives and adds the speed found to the list.
Test Speeds	

13.3.2 Copy Options

In the **Copy Options** tag the following configuration options are available in the **General** Area.

Check box	Creates the copy using the on-the-fly method.
On-the-fly copying	If this box is unchecked, the copy is created using the copy-over-image method.

The following configuration options are available in the **Copy Options** tab in the **source** area:

Drop-down menu **Drive**	Selects the drive for reading the disc. If a copy over image is created, we recommend that you select the recorder for reading in.
Drop-down menu **Read speed**	Defines the speed at which the disc is read in.

13.3.3 Read Options

The **Read Option** tab consists of several areas. In these areas it is possible to set options for reading an original disc.

The following configuration options are available in the **Profile** area:

Drop-down menu **Profile selection**	Selects predefined copy settings or a user-defined setting. In the case of predefined copy settings, Nero Burning ROM sets the configuration options automatically. You can select the configuration options yourself with a user-defined setting.

The following configuration options are available in the **Database** area for the **CD** disc type:

Check box **Ignore read errors**	Ignores read errors on the original disc and continues the read process. If this check box is cleared, Nero Burning ROM may interrupt the burn process depending on the type of error.
Check box **Write defect sectors**	Still passes on corrupt sectors (that have caused read errors) for burning. If this box is unchecked, corrupt sectors are not passed on and remain blank.
Check box **Read sectors in raw mode**	Reads PQ subchannel data.
Check box **Read all subchannel data**	Reads all subchannel data.

The following configuration options are available in the **audio Track** for the **CD** area:

Check box **Ignore read errors**	Ignores read errors on the original disc and continues the read process. If this check box is cleared, Nero Burning ROM may interrupt the burn process depending on the type of error.

Check box **Read indexes of audio data**	Reads the audio file indexes.
Check box **Read all subchannel data**	Reads all subchannel data.

The following configuration options are available in the **Advanced** for the **CD** area:

Check box **Read Media Catalog Number and ISRC**	Reads the media catalog number, a globally unique number for compilations, and the ISRC (International Standard Recording Code), a globally unique number for audio recordings.
Check box **Use jitter correction**	Jitter corrector removes scratches from audio and video files.

The following configuration options are available in the **Error Correction** for the **DVD** type disc:

Option button **Read with error correction**	Performs error correction while reading. In the process, the checksum of a corrupt sector is adjusted so that the sector in itself is consistent.
Input field **Read retry count**	Establishes the number of attempts that are made to correct errors.
Option button **Fast reading without error correction**	Performs fast reading without error correction.

The following configuration options are available in the **Dealing with Non-Correctable Reading Errors** for the **DVD** disc type:

Check box **Ignore read errors**	Ignores read errors on the original disc.
	If this check box is cleared, Nero Burning ROM may interrupt the burn process depending on the type of error.

> With certain disc formats such as video CD and audio CD, read errors often have little or no impact because they are not perceptible when the CD is played.
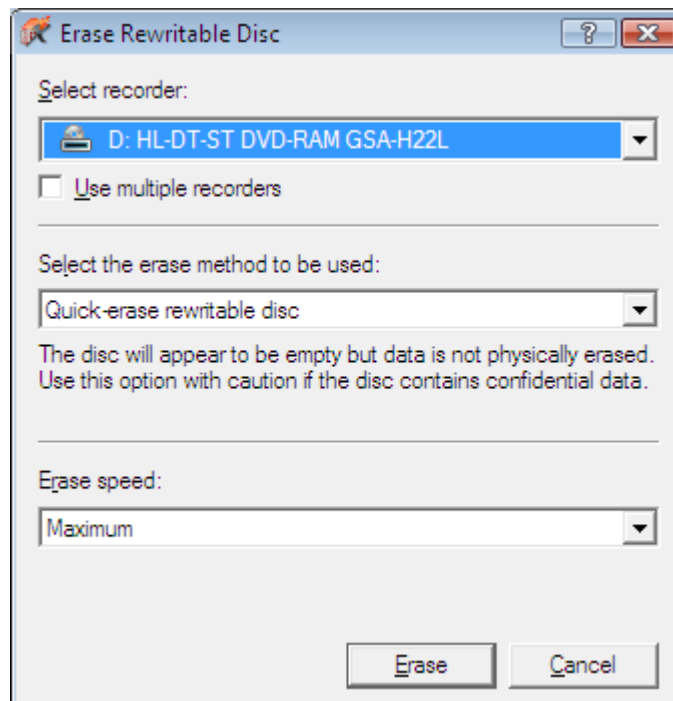
14   Erase Rewritable Disc Window

Nero Burning ROM can be used to erase rewritable discs, i.e. discs with the RW specification, as long as your recorder supports this feature. Two erase methods are available for this purpose:

Quick erasing does not remove the data physically from the disc, but instead only makes it inaccessible by erasing the references to existing content. The data can be restored!

Full erasing removes the data from the disc by overwriting it with zeroes. The contents cannot be restored with conventional methods. Repeated full erasing increases the probability that third parties will not be able to reconstruct the contents.

Erase Rewritable Disc window

The following configuration options are available in the **Erase Rewritable Disc** window:

Selection list **Select recorder**	Defines the desired recorder.
Check box **Use multiple recorders**	Simultaneously erases CDs/DVDs in multiple recorders.

Selection list **Select the erase method to be used**	Defines the erase method. Two options are available: The **Quick-erase rewritable disc** method does not physically erase all data from the disc, but only the references to the contents. The disc will appear to be empty even though the data is still physically available. Erasing a disc using this method takes between one and two minutes. The **Full-erase rewritable disc** method physically erases all data from the disc. The contents cannot be restored with conventional methods. Repeated full erasing increases the probability that third parties will not be able to reconstruct the contents. Erasing the disc using this method takes longer than the other method, depending on the type of disc involved.
Selection list **Erase speed**	Defines the erase speed.
Button **Erase**	Starts the erase process.
Button **Cancel**	Cancels the action and closes the window.

15 Updating The Virus Scanner

A virus scanner that checks the data to be burned is integrated in Nero Burning ROM. This ensures that infected data will not be burned. We recommend that you update the virus scanners regularly. The database is updated via an Internet connection.

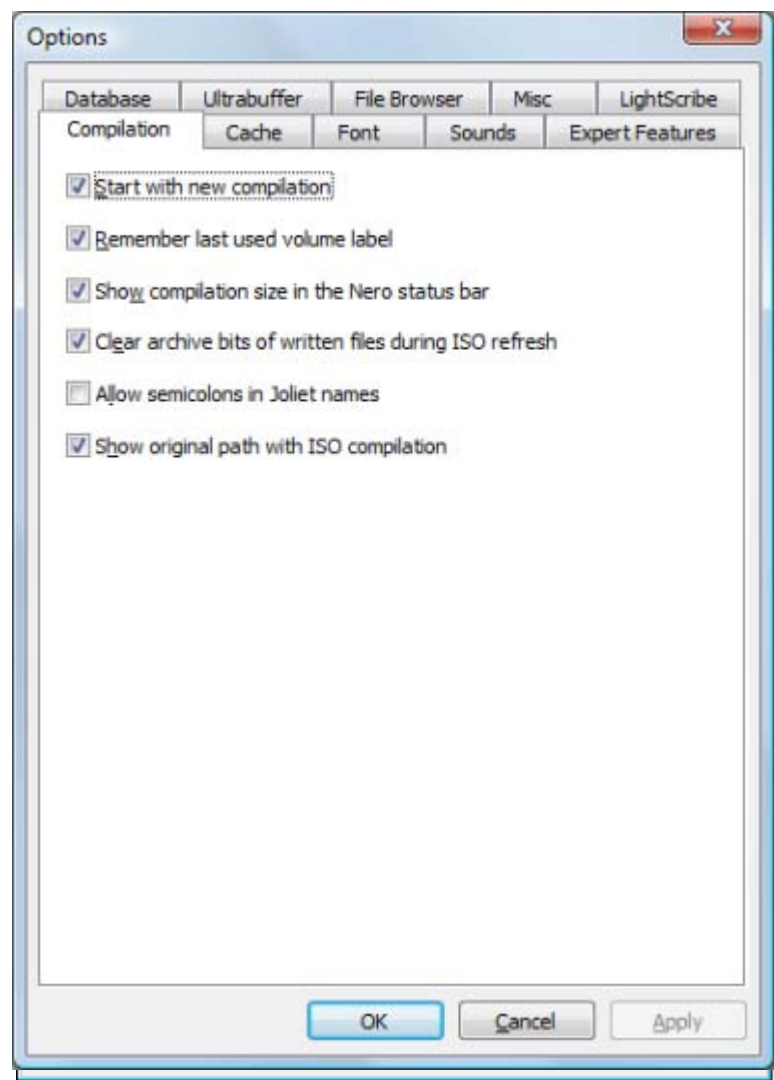The following requirement must be fulfilled:

- You must have an active Internet connection.

To update the virus scanner, proceed as follows:

1. Click the **Help** > **Update Antivirus Scanner** menu.

→ A message window is opened reminding you to connect to the Internet.

2. Click the **OK** button.

→ Nero Burning ROM is connected to the FTP server av.nero.com and the antivirus files are downloaded. The **Downloading File** window is opened; a progress bar indicates the progress being made by the update process. When the database has been updated, a message window is opened indicating that the database is now updated.

3. Click the **OK** button.

→ You have updated the virus scanner database.

16 Configuration Options

You can define options for working with Nero Burning ROM in the **Options** window.

The following tabs are available:

Compilation	Contains options for the compilation and the selection screen.
Cache	Contains options for the cache.
Font	Contains selection options for the font.
Sounds	Contains selection options for sounds in connection with burn tasks.

Expert Features	Contains options for configuring overburning and burning. We recommend that you retain the default settings.
Database	Selects the default naming method for audio files to be saved from an Audio CD to the hard drive.
Ultrabuffer	Defines the size of the RAM buffer.
File Browser	Contains options for configuring the file browser.
Misc.	Contains options for configuring compilations, burning, the database, the user interface as well as advanced settings.
LightScribe	Contains options for configuring LightScribe recorders such as the print contrast (quality), default drive, and default template. This tab is only available if a LightScribe recorder has been installed.

16.1 Compilation Settings

The following configuration options are available on the **Compilation** tab:

Check box **Start with new compilation**	Starts when opening a new compilation from Nero Burning ROM.
Check box **Remember last used volume label**	Makes available the title for the next disc.
Check box **Show compilation size in the Nero status bar**	Displays the storage volume of your files in a status bar.
Check box **Clear archive bits of written files during ISO refresh**	Deletes the archive bits of saved files.
Check box **Allow semicolons in Joliet names**	Allows the use of semicolons in addition to standard uppercase and lowercase letters and Unicode characters (and German umlauts) in file names in the Joliet file system.
Check box **Show original path with ISO compilation**	Lists the full path of the added files in the compilation screen in the **Source** column.

16.2 Cache Settings

The following configuration options are available on the **Cache** tab:

Input field **Path for cache**	Displays the path of the Cache memory. You can enter the path manually or select the path in the browser window.
Button **Browse**	Opens a browser window. You can select a folder in which data is buffered before and during the burn process.
Input field **Minimun space on hard drive, which Nero should not use**	Defines a storage volume that is not used by Nero Burning ROM.
Check box **Drag and drop from CD-ROM drive**	Saves files that have been copied from a CD-ROM drive in the clipboard.

16.3 Expert Features

The following configuration options are available on the **Expert Settings** tab:

Check box **Enable Disc-at-once CD over-burning**	Enables additional options and defines settings for the entire burn process.
Option button **Relative maximum/minimum overburning size**	Defines how much a disc can be overburned.
Check box **Enable DVD overburning**	Enables the option that DVDs can be overburned.
Check box **Enable generation of short lead-out**	Enables the option to write additional data to your CD. This feature is only available if the **Enable Disc-at-once CD overburning** option is enabled.
Check box **Do not eject disc after burning**	Enables the option that your disc remains in the recorder and is not ejected when the burn process is finished.
Check box **Enable all supported recorder formats for image recorder**	Enables the option that all supported recorder formats for the Image Recorder are available.

16.4 Ultrabuffer Settings

The following configuration options are available on the **Ultrabuffer** tab:

Selection list **Method**	Defines the memory capacity that Nero Burning ROM uses as a RAM buffer. The ultrabuffer is a second memory that enhances the physical buffer in the recorder.
Input field **Data buffer size**	Defines the memory capacity that can be manually entered. The input field is only enabled when **Manual Configuration** is selected in the selection list.

16.5 LightScribe Settings

The following configuration options are available on the **LightScribe** tab:

Area **Print contrast**	Adjusts the desired print quality.
Selection list **Default LightScribe drive**	Selects the drive with the LightScribe recorder.
Selection list **Genre**	Specifies the genre.
Selection list **Current template**	Defines a template for labels.
Selection list **Default print resolution (DPI)**	Adjusts the desired print resolution.
Check box **Printing LightScribe labels**	Enables the option to automatically burn a LightScribe label. This tab is only available if a LightScribe recorder has been installed.

17 Technical Information

17.1 System Requirements

Nero Burning ROM is installed along with its suite. Its system requirements are the same. You can find more detailed information on the system requirements under www.nero.com.

- In addition, the following requirements apply:

> **Using LightScribe Direct Disc Labeling**
>
> Your computer requires the latest LightScribe system software when using a CD or DVD recorder with LightScribe support.
>
> If you have downloaded and installed an updated Nero version from the Nero website, install the LightScribe system software separately. You can find the latest version at www.nero.com/link.php?topic_id=114&gen_id=8.

- Optional: LightScribe capable burner (LightScribe host software must be installed) and LightScribe capable disc
- Optional: Labelflash capable recorder and Labelflash disc
- Optional: Blu-ray capable recorder and Blu-ray disc

17.2 Disc Types

- CD
- DVD
- Blu-ray - burning only

> You can find more information on Blu-ray support at www.nero.com/link.php?topic_id=416.

> The actual entries that are available, and the actual disc types (e.g. **DVD**) that can be written to depend on the recorder used.

17.3 Disc Formats

- Audio CD
- Mixed mode CDs
- CD EXTRA
- Video CD (VCD)
- Super Video CD (SVCD)
- miniDVD
- Audiobook CD

- DVD-Video

17.4 Audio Formats And Codecs

- Advanced Audio Coding (AAC, M4A, MP4)
- Audible Audiobook (AA)
- Audio Interchange File Format (AIFF, AIF)
- Compact Disc Digital Audio (CDA)
- Musical Instrumental Digital Interface (MIDI, MID)
- MP3 / mp3PRO
- Moving Picture Experts Group-1 Audio Layer 3 (MP3)
- Moving Picture Experts Group-1 Audio Layer 2 (MP2)
- Moving Picture Experts Group-4 (MP4)
- Nero Digital (MP4)
- OGG Vorbis (OGG, OGM)
- Recource Interchange File Format WAVE (WAV, WAVE)
- Windows Media Audio (WMA)

17.5 Metadata

- Advanced Streaming Format (ASF)
- Audio Video Interleave (AVI)
- Moving Picture Experts Group-1 Audio Layer 3 (MP3)
- Nero Digital (MP4)
- OGG Vorbis (OGG, OGM)
- Recource Interchange File Format WAVE (WAV, WAVE)
- Windows Media Audio (WMA)
- Windows Media Video (WMV)
- ID3 Tags (v1.1/v2)
- Joint Photografic Expert Group (JPEG, JPG, JPE)
- Portable Network Graphics (PNG)
- Bitmap (BMP)
- Graphics Interchange Format (GIF)
- Tagged Image File Format (TIFF, TIF)
- Moving Picture Experts Group-1 Audio Layer 3 (MP3)

17.6 Video Formats And Codecs

- Advanced Streaming Format (ASF)
- Audio Video Interleave (AVI)
- Digital Video (DV)
- Moving Picture Experts Group-2 (MPG, MPEG, DAT, M2T)
- Moving Picture Experts Group-4 (MP4)
- Nero Digital (MP4)
- QuickTime Movie (MOV)
- Video Object (VOB)
- Packet Video Audio (PVA)
- Television Input/Video Output (TIVO)

17.7 Image Formats

- Bitmap (BMP)
- Device Independent Bitmaps (DIB)
- Graphics Interchange Format (GIF)
- Icon Image File (ICO)
- JPEG File Interchange Format (JFIF)
- Joint Photografic Expert Group (JPEG, JPG, JPE)
- Picture Exchange (PCX)
- Portable Network Graphics (PNG)
- Portable Pixel Map (PPM)
- Targa Image File (TGA)
- Tagged Image File Format (TIFF, TIF)
- Windows Media File (WMF)

17.8 Formats For Playlists

- Moving Picture Experts Group Audio Layer 3 Uniform Resource Locator/MP3 URL (M3U)

18   Glossary

AIFF
The Audio Interchange File Format is an uncompressed audio file format from Apple® and represents a sort of counterpart to the WAV format from Microsoft. Files are larger than when using a compressed format, but the quality is higher. AIFF compressed is the compressed variation.

Archive Bit
Archive bits are used to identify files that have been edited. A file is only resaved during the next backup process if it was edited (and an archive bit is thus reset).

Blu-ray
Blu-ray technology refers to burning on special data carriers. In comparison to DVD's, which use a red laser in order to read and write data, Blu-ray discs are written with a blue laser. The shorter wavelength (405 nm) of this blue laser makes it possible to position the laser with greater accuracy. Data can be written in a more compact manner and takes up less space on the disc. A Blu-ray disc can store up to 25 GB on a single layer disc and up to 50 GB on a dual layer disc.

Book Type
The book type defines the specification (e.g. DVD-, DVD+, DVD-ROM) of a DVD. In order to ensure correct playback, the DVD specifications are defined in books so that all media can be read correctly. The specifications are defined in the so-called Rainbow Books, which are distinguished by means of their color (e.g. Yellow Book).

Bootable CD
Booting refers to loading the operating system when a computer is started. This is normally done from the hard drive. However, if you do not want to boot or cannot boot your computer from your hard drive for whatever reason, you can load an operating environment from the drive with a boot CD.

Buffer
A buffer refers to temporary memory that records and delivers data that cannot be processed immediately as required. The buffer also allows for continuous data flow.

Buffer Underrun
A buffer underrun is an interruption in the data flow in the internal memory (e.g. of the recorder). A buffer underrun results from an interruption in the data flow to the internal buffer. The buffer continues to deliver data until it is finally empty. When recording, data is fed continuously to the recorder's buffer in order to keep a steady flow of data. If the steady flow of data is interrupted, the media becomes unusable. Most modern recorders have a protective mechanism against buffer underruns.

Cache
Cache is a faster buffer that is used in various areas of a computer to access larger data volumes faster. Cache ensures a continuous flow of data.

CD-R
Compact Disc-Recordable is a technology for write-once media. The Orange Book standard defines the storage of audio data and other computer-readable data.

Codec
The compressor/decompressor encodes the data for recording or saving digitally and then decodes it for playback. Various software codecs are available such as Cinapak, Indeo, Quicktime, Video for Windows, etc. Hardware codecs include MPEG, H.261, Motion JPEG, etc.

Disc-At-Once
Disc-At-Once refers to a method in which the laser in your recorder burns straight through in one session without turning off and on between each track. This method is best when recording Audio CDs you would like to play on your home or car stereo.

Frame
With an Audio CD, 75 sectors provide one second of played music. One sector consists of up to 98 frames; one frame contains 24 data bytes and 9 control bytes. Similarly, "frame" describes a full screen in television and video technology. Two successive half images result in a full screen within a second due to interlacing.

Image
An image refers to a single file on the hard drive that contains the image for a complete disc. A disk image can be used to create exact copies on media at a later point in time if problems occur during the write process or if no recorder is connected to your PC. The image requires as much free space on the hard drive as the contents of the original disc.

Jitter
Jitter refers to an abrupt and undesired change in the signal characteristics. Small gaps occur in the data stream as a result. Audio correction synchronizes the data by overlapping the sectors. This way, the gaps are not audible.

Joliet
Joliet refers to an extension of the ISO-9660 standard for file names. Joliet was designed by Microsoft in order to represent more characters. The file name can be up to 64 characters long and contain the letters A-Z, a-z, umlauts and the ß.

Label
A label refers to a label on a disc. Some drives, e.g. drives that use LightScribe or Labelflash technology, can transfer labels directly to special media.

Labelflash
Labelflash is a technology with which pictures and texts can be burned on the label or data side of a disc with a laser.

LightScribe
LightScribe is a technology with which pictures or texts can be burned on the label side of discs with a laser.

MP3
The MPEG-1 Audio Layer 3 audio format is used to reduce the size of audio files to a fraction of their original size (factor 1:10) with little loss of quality. You can estimate about 1 MB per minute as opposed to 10 MB for the original files. This value and the quality can vary depending on the complexity of the audio signal. The bit rate used can be used as a measure of quality. The higher the bit rate, the better the quality, but also the more memory required.

mp3PRO
mp3PRO is an MP3 codec that compresses audio files even more but in lower bit rates and better quality. 64 kBit/s in mp3PRO is the equivalent to 128 kBit/s in MP3.

MPEG-1
The Moving Picture Experts Group defined this industry standard for video and audio codecs. MPEG-1 is part of the MPEG compression family and has the highest compression rate. MPEG-1 is the format for video CDs.

MPEG-2
The Moving Picture Experts Group defined this industry standard for video and audio codecs. There is little difference between MPEG-1 and MPEG-2: MPEG-2 is a broadcast standard and better for televisions that are interlaced. MPEG-2 is used as a video format for DVDs.

Multisession
A multisession refers to completing a disc in multiple cycles. After a first session has been written to the disc, information can then be added in another record because the disc has not been finalized.

Nero Digital
Various MPEG-4 video and audio codecs are collated in Nero Digital and are fully compatible with the standard MPEG-4. Nero AG is continuing to develop these. In this way a substantially higher quality of the multi-media data is achieved. Further, additional features such as subtitles have been implemented.

NTSC
The National Television System Committee Standard is a standard for video and TV in the USA and Japan. NTSC has more individual frames (29.97 frames per second) than PAL, but has fewer horizontal lines (525 lines).

PAL

The Phase Alternation Line procedure is the TV standard applicable for Europe. PAL possesses 625 lines per screen and the film transmission speed is 25 pictures per second. These are transmitted in the so-called line-jump procedure where a picture with all the odd lines and then a picture with all the even lines are created. This corresponds to a half-picture frequency of 50 Hz.

SecurDisc

SecurDisc refers to a security technology that protects data carriers from unauthorized access and duplication. SecurDisc can only be burned and password protected with a SecurDisc drive. Access with other drives is only possible to a limited extent. The following disc formats are supported, although without the copy protection feature: DVD+R(W), DVD+-R DL, DVD-RAM and CD-R(W).

Subchannel data

Subchannel data on a disc contains additional information, such as CD Text or information on positions.

Track-At-Once

Track-At-Once refers to a write method in which each track is written to the disc individually. The writing process is interrupted briefly after each track, i.e. the laser starts again for each track. With this write method, it is only possible to continue writing to a DVD sometimes and at a later stage. There is a pause of at least 27ms between tracks, which can be disruptive for Audio CDs.

VCD

The Video Compact Disc saves movies and audio/video data in MPEG-1 format. In doing so, the video quality from a VCD is similar to a VHS video. VCDs can store up to 74 minutes of video material including stereo sound on a 650 MB disc. Most optical PC drives and DVD players can play VCDs.

WAV

The WAV audio format, also called WAVE or Waveform audio format, is an audio format from Microsoft and uses no data compression. WAV is the counterpart to the AIF format from Apple.

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